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ABSTRACT

This planning guide for farm business analysis programs presents units of instruction in four major areas: (1) farm records and accounts (14 units), (2) farm records summary and analysis (17 units), (3) farm planning and reorganization (16 units), and (4) advanced farm and ranch management (11 units). Each unit outline is divided into six major areas: terminal objectives, specific objectives, possible learning activities, outline of instructional content, instructional material, and references. (LRA)

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PLANNING GUIDE FOR KANSAS FARM BUSINESS ANALYSIS PROGRAMS

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FARM MANAGEMENT I

UNIT 1: THE VALUE, NEED, AND USE OF FARM RECORDS

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to list benefits and uses of farm records, and select a good farm record keeping system.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Describe why farm records are needed.

B. Explain what records tell about a farm.

C. List and explain the various kinds of accounting systems and the advantages and disadvantages of each.

D. Explain how a farm record book is organized.

E. Demonstrate sample entries in a farm record book.

F. Understand the various uses of farm records.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Have a banker come in and give a talk on record keeping.
2. Show filmstrips: "Increasing Earnings through Farm Records," 353-A; "What Records Tell About this Farm," and "Starting To Keep Records" Vocational Agricultural Service, University of Illinois at Urbana-Champaign.
3. Provide students with the Kansas Farm Account Book.

B. Student:

1. Work shortcourse with the Kansas Farm Account Book.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Research for Keeping Farm Accounts

Records of business operations and financial transactions are as important to a farmer as they are to other businessmen. Some of the more important reasons for keeping accurate, useful farm accounts are as follows:

1. To check on the financial position of the farm family and to measure its financial progress from year to year.

2. To aid in analyzing the performance of the farm business.
3. To aid in filing income tax forms.
4. To provide basis for sound decision making.
5. To help in making plans and budgets for future farming operations.

B. Methods of Farm Accounting

Some farmers do little more than total their check stubs and bank deposit slips for their farm accounting system. Others keep cash journals that require many hours to sort and summarize at the end of the year. Our grandfathers, with a smaller volume of business, might have been able to remember how much they received for hogs even four or five years ago. Today's business makes it absolutely necessary that we record and retain the records of the time of acquisition and cost of capital assets (a tractor, the farm itself, or a new machinery shed); the amounts paid for hired labor and to whom paid, along with their Social Security numbers; the herbicides used in each field, and many other facts.

One has a choice of filing income tax by one of two methods. This selection and the type of farming followed, the tenure system, the need for finance control, and the desire for (or lack of need for) detail enterprise accounts all influence the record system that should be chosen.

It is hard to conceive how a good manager can function without adequate records to assist him.

The two methods that are accepted for filing federal income tax returns are: (1) the cash receipts and disbursement, and (2) the accrual methods.

1. Cash Basis

On the cash basis, farm income includes all cash of value of merchandise or other property received during the year. However, this method does not take into consideration changes in farm inventories. It does not include value of products sold or of services performed for which payment was not received during the year. Farm expenses are deductible in the year they are actually paid. Approximately 95 percent of the farmers file their income tax reports on the cash basis.

a. Advantages

1. It is simpler and easier to use.
2. It is not necessary to take inventories of crops and livestock because income is based only on cash receipts and expenses; however, inventories are very essential for complete business analysis. In order to be able to make charges for depreciation of captial assets (machinery, buildings, and purchased breeding livestock) it is necessary to keep inventory accounts of these items whichever system of reporting is used.
3. There are low tax payments in years of low cash receipts.

b. Disadvantages

1. One year's income may include the sales of products raised in former years.
2. Sale of depreciable property is sometimes mistakenly reported as current farm income.
3. It is necessary to wait until purchased feeder livestock are sold before costs can be deducted.
4. Care must be exercised to be sure that accounts receivable are omitted from income calculations since only cash transactions are considered.
5. No changes in inventories are considered when figuring farm income.

2. Accrual Basis

The accrual method utilizes the complete inventory of assets, and changes in beginning and closing inventories are considered when determining farm income. Farm income is included for the year in which it is earned regardless of when payment is received, while farm expenses are deductible in the taxable year in which incurred, whether paid or not.

The accrual method can only be used when complete records are available. These accounts must include a record of all sales (including sale of capital assets), cash income, operating expenses, a beginning and closing inventory of all livestock, hay, grain and supplies, and a depreciation schedule for all improvements and equipment on which depreciation allowances are to be claimed. Over a period of years, the accrual basis usually results in a more uniform pattern of income from year to year and over a period of years resulting in less taxes.

a. Advantages

1. It provides a more stable basis for calculating taxable income because:
   (a) net farm profit is limited to that portion of the gross income produced during the taxable years.
   (b) increases in cash receipts are usually accompanied by decreases in physical inventories.
2. Cost of purchased livestock can be deducted the same year purchases are made.
3. In the event of dispersal sales of livestock and crops, the decrease in inventory will compensate for the resulting increase in gross receipts.

b. Disadvantages

1. It may be that in a year of low cash receipts, high tax payments may result because of sharp increases in inventories.

Regardless of the accounting method used in filing income tax, if the farmer keeps a complete and accurate set of farm inventories, the cash method can be as good as the accrual method for farm business analysis.

As mentioned previously, one task of the farm manager is to select the kind of accounting system which will best serve his particular purposes. The final decision must be made by the individual farmer.

C. How a Farm Record Book is Organized

1. Kinds of accounts

a. Inventory Accounts

b. Capital Accounts

If an item is depreciable, it belongs in a capital account. Items generally included are machinery and equipment, auto, soil improvements, and farm improvements.

c. Cash Accounts

Include all items of cash farm income and farm expenses not included in inventory and captial accounts. Quantities and weights, as well as values, should be recorded, with names of item, person or firm from which it is purchased or to whom it is sold.

2. Other records and accounts

A complete farm record includes several other production and financial items:

a. A Land Inventory (may be included)

When included in a record, purchases and sales of land are not considered a part of the annual farm business.

b. A Farm Map

Should be drawn early in the year as crop plans are made. Fertilizer applications and other relevant information can be recorded as the crop year progresses.

c. Complete Production records

Very valuable. Quantities or numbers of all commodities in inventories produced, purchased, and sold are valuable for calculating production.

d. A Record of all Losses

Losses caused by such things as death, storm, fire, or spoilage, as well as the amount and value of home-raised products used in the household is helpful for completing a summary and analysis of the farm business. The amount and value of unpaid labor provided by the operator and members of the family should also be recorded.

D. Making Entries in a Farm Record Book

1. Some record keeping suggestions

   a. Become familiar with the record book before starting to use it.

   b. Use bookmarkers to help you find the correct pages more quickly.

   c. Use a sharp pencil with a medium-hard lead.

   d. Develop good record-keeping habits.

2. Steps in record keeping

   a. Enter the beginning-of-year inventories.

   b. Set up the depreciation schedules. The Farmers' Tax Guide, published by the Internal Revenue Service, provides information on methods of depreciation suitable for income tax purposes.

   c. Enter records of receipts, expenses and production. The record book has now been started for the year.

   d. Enter the end-of-year inventories. After making all entries of receipts, expenses, and production for the year, the book can be completed. For most farmers, this would be December 31.

   e. Complete the depreciation schedules for the year.

E. Uses of Farm Records Include:

1. To furnish information necessary for tax reporting

   a. Income

   b. Social Security

   c. Personal Property

   d. Real Estate

   e. Gasoline

2. To determine farm earnings.

3. To observe financial progress.

4. To determine which enterprises are the most profitable.

5. To determine weaknesses and strengths in the farm business as a whole and in specific enterprises.

6. To furnish information to evaluate personal spending.

7. To preserve information about the business for further references.

8. To supply fee input and cost data for future planning.

9. To supply necessary information for use when obtaining credit.

10. To provide a basis for sound management decisions.

11. To provide a basis for establishing an equitable farm lease.

12. To provide actual value for property destroyed by fire.
13. To check on the financial position of the family farm and to measure its financial progress from year to year.
14. To aid in analyzing the performance of the farm business.
15. To aid in filing income tax forms.
16. To provide basis for sound decision making.
17. To help in making plans and budgets for future farming operations.

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Farm Records - A Management Tool, Ohio Agricultural Education Curriculum Materials Service, Ohio State University.

Farm Records - A Tool for Business Management, Cooperative Extension Service, Kansas State University, Manhattan.

Setting Up Records to Provide for Analysis, VAS 2037, Vocational Agriculture Service, University of Illinois.

Farm Record Keeping with the Kansas Farm Account Book, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

Record Keeping on the Farm, Vocational Agriculture Service, University of Illinois.

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University.

FARM MANAGEMENT I

UNIT 2: INVENTORIES - AN INTEGRAL PART OF ACCRUAL ACCOUNTING

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to select the method of evaluation to use in farm inventories and construct a farm inventory. He should be able to use depreciation to compute a farm inventory.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. List the two factors to consider in taking an inventory.

B. List 3 reasons to keep in mind when selecting evaluation method or methods.

C. Explain how value of farm property may be made and why you use a particular method.

D. Select from a list of IRS restrictions in evaluations of farm property.

E. Explain how value of capital assets are derived.

F. Explain what capitalization is, where it might be used, and why.

G. Demonstrate ability to correctly:

a. Enter a payable schedule.
b. Enter a receivalbes schedule.
c. Inventory a given farming operation.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Show filmstrip "Inventory Your Resources" 370-A; Vocational Agriculture Service, Univeristy of Illinois at Urbana-Champaign.

B. Student:

1. Bring inventories of your farm up-to-date.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Inventorying Resources for Farm Planning, VAS 2002b; University of Illinois at Urbana-Champaign.

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University.

FARM MANAGEMENT I

UNIT 3: TAKING BEGINNING INVENTORIES

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to effectively take beginning inventories.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Define the different methods of inventorying assets.

B. Distinguish which method of inventorying is correct for a certain asset.

C. Take a beginning inventory of his own farm.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Hand out inventory worksheets, go over it with students.

B. Student:

1. Take a beginning inventory of your farm.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University.

Farm Records - Farm Inventories, Kansas Core IV.

FARM MANAGEMENT I

UNIT 4: POSTING ENTRIES IN THE KANSAS FARM ACCOUNT BOOK

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to make entries in the Kansas Farm Account Book.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Determine where entries should be made in the Kansas Farm Account Book.

B. Distinguish the correct column for entries.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Show filmstrip "Keeping Records Up-to-Date" 351-A; Vocational Agriculture Service, University of Illinois at Urbana-Champaign.
2. Provide students with shortcourse "Farm Record Keeping with the Kansas Farm Account Book".

B. Student:

1. Complete sample entries in the Kansas Farm Account Book.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Farm Record Keeping with the Kansas Farm Account Book, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University.

FARM MANAGEMENT I

UNIT 5: CHOOSING DEPRECIATION METHODS

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to judge the depreciation methods and select the correct ones for his situation.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Explain the difference between capital purchase and other types of purchases.

B. List the three methods of computing depreciation and explain the advantages of each.

C. Demonstrate ability to depreciate an item using the SL, sum of years digits, and declining balance methods.

D. Choose an appropriate depreciation method.

E. Explain what IRS means by "basis".

F. Select from a list the guidelines for placing repairs on a depreciation schedule.

G. List the advantages of additional 1st year depreciation and investment credit.

H. List the major purposes of depreciation of an asset.

III. POSSIBLE LEARNING ACTIVITIES.

A. Instructor:

1. Hand out depreciation worksheet.

B. Student:

1. Work out depreciation problems on your own equipment.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Depreciation

The cost of machinery, equipment, farm buildings, land improvements,

purchased breeding livestock, and other property with a useful life of more than one year used in trades or business is classified as a capital expenditure. Since items classified as captial expenditures are used in the farm business for more than one year, a proportion of the original or total cost should be charged as expense each year. The amount to deduct as expense each year will depend upon the number of years the item is to be used in the farm business. This overhead or fixed expense is referred to as depreciation. It is an allowance to the farmer for the use of capital resources in the farm business. In other words, the farm operator should deduct as fixed costs, depreciation on certain items for the exhaustion, wear and tear, and obsolescence of property used in his business or held for the production of income.

The purpose of the depreciation deduction is to let the farmer recover his investment in depreciable property (purchased livestock, power, machinery, equipment, buildings, and improvements) over the period of useful life of the asset. It is a "slow using up of a long-lived asset."

B. Methods of Computing Depreciation

There are several methods of computing the rate of depreciation. The method employed should depend on the rate the asset decreases in market value. The most common methods of figuring depreciation are:

1. Straight-line
2. Diminishing or declining balance
3. Sum-of-the-Years digits

For income tax reporting, any one of the three methods may be used. But once a method has been selected, the farmer must continue to use that method for depreciable property listed in earlier tax returns.

The last two methods can be chosen for use with farm machinery and purchased breeding livestock but they are not available for use with farm buildings.

1. Straight-line

The straight-line method of computing depreciation is the simplest. Figuring depreciation by the straight-line method consists simply of dividing the total anticipated depreciation by the expected number of years of machine life to find the depreciation charge for each year. The total anticipated depreciation is the purchase price of the item minus the salvage value when the asset is finally discarded.

For example:

Assume a farmer purchased a new tractor for $8000. He expects it to last for ten years and has estimated the salvage value at $2000.

Cost	$8000	
Salvage value	- 2000	10 years = $600
Anticipated depreciation	$6000	Annual Depreciation

If a farmer is anticipating higher levels of income in future years, he probably should use the straight-line method. In certain situations, where capital is extremely limited in the farm business, it might be advisable for the farmer to use a faster method of depreciation than the straight-line. Using a faster depreciation write-off would tend to make more capital resources available for the farm business at present but would limit the deduction of depreciation expenses in the future.

The straight-line method is satisfactory for purposes of analyzing the farm business where the machine or other item will be used at a rather constant amount through the years. However, this method does not reflect true net worth or market value satisfactorily when inventory values are based on it. This is especially true in the first year of a machine's life when current market price declines more rapidly than does the inventory value of the machine.

2. The declining balance method is more complicated to compute but conforms more closely to the actual decline in the resale value of the asset. Under this method the largest depreciation deduction is taken the first year of life and a gradually declining allowance in each of the following years. Using this method, the same percentage of the remaining value (cost minus prior depreciation) is deducted each year for depreciation.

The declining balance rate can be twice the rate for the straight-line method on the unrecovered cost at the beginning of each year. The rate or percent of annual depreciation for declining balance is determined as follows:

5 Years Expected Life			10 Years Expected Life		
$\frac{100\%}{5 \text{ years}}$	=	20% annually (straight-line)	$\frac{100\%}{10 \text{ years}}$	=	10% annually (straight-line)
20% X 2	=	40% annually (declining balance)	10% X 2	=	20% annually (declining balance)

No salvage value is deducted from the original cost when computing annual depreciation using the declining balance method, but the farmer never depreciates below his estimated salvage value. REMEMBER: Salvage value is deducted from original cost when the farmer uses the straight-line method.

Figuring depreciation by the declining balance method consists of multiplying the rate of annual depreciation times the unrecovered cost at the beginning of each year.

For example:

Assume a farmer purchased a new tractor for $8000, and he expects it to last for ten years.

1) $\frac{100\%}{10}$ = 10% X 2 = [illegible] of depreciation

2)	Cost - $8000 X 20%	=	$1600 depreciation first year
3)	Unrecovered cost at beginning of 2nd year	$8000 -1600 $6400 X 20%	= $1280 depreciation 2nd year
4)	Unrecovered cost at beginning of 3rd year	$6400 -1280 $5120 X 20%	= $1024 depreciation 3rd year

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The amount of depreciation deducted each year is subtracted from the unrecovered cost of the preceding year before figuring the next year's depreciation; the same rate is applied to a smaller or declining balance each year. Using this method, the balance never completely disappears.

The advantage for using this method is that larger depreciation in the early years of the farm business can result in lower taxes and permit more capital to be available for operation of the farm.

3. Sum-of-the-Years Digits Method

If it is desired to distribute the depreciation expense more heavily in the first years of life and more lightly in the later years, the sum of the year digits method has some advantages over the declining balance method. It is possible to depreciate an item to its estimated salvage value.

Figuring depreciation by the sum of the years digits consists of two steps:

a. Determining the total anticipated depreciation. This is accomplished in the same manner as used in the straight-line method. (Original cost minus salvage value)

b. Determining the distribution rate base. This is achieved by adding up the digits representing the years of expected life; for example if the expected life is six years:

6 + 5 + 4 + 3 + 2 + 1 = 21, 6/21 the first year, 5/21 the second year, etc.

For example:

Assume a farmer purchased a new tractor for $8000, he expects it to last ten years and has estimated the salvage value at $2000.

1)	Original cost	-	Salvage value	=	depreciation
	$8000	-	$2000	=	$6000

2) 10 + 9 + 8 + 7 + 6 + 5 + 4 + 3 + 2 + 1 = 55

1st year - $\frac{10}{55}$ X 6000 = $1090.90 depreciation 1st year

2nd year - $\frac{9}{55}$ X 6000 = $981.81 depreciation 2nd year

3rd year - $\frac{8}{55}$ X 6000 = $872.72 depreciation 3rd year

Etc.

Summary

The straight-line method allows the same amount of depreciation changes each year. The latter two methods of figuring depreciation provide a more rapid rate of write-off in the early years of the life of the investment, but a slower rate in the later portion of its useful life with the Declining Balance giving the greatest rate of write-off in the earlier years.

The following table illustrates the annual depreciation changes when the annual depreciation is figured by the three methods discussed above. Figures are for a $8000 tractor with a $2000 salvage value and ten years of useful life.

TABLE 1

DEPRECIATION COMPARISON TABLE

Year	Straight-line 10 Percent	Declining Balance 20 Percent	Sum-of-the-Years Digits
1st	$ 600	$ 1600.00	$ 1090.91
2nd	600	1280.00	981.82
3rd	600	1024.00	872.73
4th	600	819.20	763.64
5th	600	655.36	654.55
6th	600	524.29	545.45
7th	600	97.15	436.36
8th	600	00.00	327.27
9th	600	00.00	218.18
10th	600	00.00	10 9.09
Total	$6000	$ 6000.00	$ 6000.00
Salvage value	$2000	$ 2000.00	$ 2000.00

Under no circumstances may an item be depreciated below the

salvage value established at the time of purchase.

For ease of calculating depreciation, income tax law permits the salvage value of an asset to be reduced by 10 percent of the basis on assets with a life of three years or more.

If the salvage value is 10 percent or less of cost, it can be disregarded in figuring annual depreciation, but one cannot depreciate an item below sal value.

Example #1:

A farmer purchases an $8000 tractor with a life of ten years. He estimates salvage value to be $2000. Since he can reduce salvage by 10 percent of the cost, he subtracts $800 from the $2000 and uses $1200 as salvage in figuring depreciation.

Example #2:

The same situation excent this farmer estimated salvage value at $800. This is 10 percent of the cost so salvage can be ignored and the $8000 would be used for depreciation.

A farmer may select any method of figuring depreciation when a depreciation schedule is established for new property added to the farm business. For income tax purposes, any change in method of computing depreciation which will involve a faster depreciation rate requires the consent of the Internal Revenue Service. However, a farmer can change from a more rapid rate of write-off (either declining balance or sum-of-the-years digits) to the straight-line method at any time during the useful life of the property.

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

"Choosing Depreciation Methods" MF-340, Dept. of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

Farm Records - A Management Tool, Ohio Agricultural Education Curriculum Materials Service, Ohio State University.

FARM MANAGEMENT I

UNIT 6: COMPUTING NET FARM INCOME ON ACCRUAL BASIS

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to compute net farm income on the accrual basis for his farm.

II. SPECIFIC OBJECTIVE

After instruction, the student should be able to:

A. List items needed to compute net farm income on accrual basis.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

B. Student:

1. Compute your previous year's net farm income on Accrual Basis.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

FARM MANAGEMENT I

UNIT 7: DETERMINING THE NET WORTH OF THE FARM BUSINESS

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to match various types of assets and liabilities and demonstrate the ability to complete a net worth statement.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Define net worth.

B. Explain the difference between a current asset, working asset, and fixed asset.

C. Explain the difference between a short term liability, intermediate liability, and a long term liability.

D. Demonstrate ability to correctly complete a net worth statement.

E. Select from a list the uses made of a net worth statement.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

B. Student:

1. Calculate the net worth of your farm business.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

Material useful in teaching this unit is contained in Farm Management II, Unit 7.

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University.

FARM MANAGEMENT I

UNIT 8: ANALYZING AND USING FARM BUSINESS ACCOUNTS IN DECISION MAKING

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to complete a total farm business analysis and determine its strong and weak points.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. List 3 factors that affect adjusted net farm income.

B. Explain how to calculate return to operator's labor and management.

C. List and explain the 3 capital efficiency ratios.

D. Explain what "gross profit per dollar expense" is and how it is computed.

E. List and describe 4 ways of measuring farm size efficiency.

F. Explain what "rate of capital turnover" is and why a beginning farmer may be concerned with such a figure.

G. List the 5 key factors that are most important in total farm analysis.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Show filmstrip "Summarizing and Analyzing Records" Vocational Agriculture Service, University of Illinois.

B. Student:

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

FARM MANAGEMENT I

UNIT 9: MAKING THE TEN-MONTH SUMMARY INCOME ESTIMATE

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to estimate his income for that year.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Determine his income for the 10-month period.
B. List likely expenses and receipts for the final two months.
C. Design a program for the final two months to minimize taxes.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

B. Student:

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

FARM MANAGEMENT I

UNIT 10: FARM TAX MANAGEMENT

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to list advantages and disadvantages to the proper methods of reporting farm income.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Explain the purpose of tax management.

B. Describe the two different tax accounting methods.

C. Describe what investment credit is and how it may be used.

D. List 10 tax management tips.

E. Be familiar with the tax reporting reminders.

F. Explain what income averaging is and why it is used.

G. Identify the main sources of information to keep up to date with tax changes for farmers.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide student with pamphlet "Tax Management for Farmers".

B. Student:

1. List tax management strategies that would increase after-tax income.
2. Complete an "Income Tax Estimate".

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Purpose of Tax Management

Tax management is an important part of good farm business management. The objective of most farm business managers is to minimize income taxes while maximizing after-tax income. Thus, farm managers must have a knowledge of the tax consequences of farm business decisions made throughout the year. If you manage a farm, you need not be a tax expert, but you must be knowledgeable enough about taxes to recognize the tax consequences of a farm business decision and to know when to call a tax consultant for advice.

B. Tax Accounting Methods

You may keep records and file your tax return using either the cash basis or the accrual basis. A combination of methods may be acceptable if it clearly reflects income and expenses. The method of accounting for tax purposes must be the same as the method by which you keep records.

1. Cash Method

When your income tax return in filed on the cash basis, gross farm income includes: (1) income actually or constructively received from the sale of all crops and market livestock produced on the farm, (2) profits (selling price less cost) on livestock and other items purchased for resale and (3) other farm income actually or constructively received.

a. There are certain advantages of filing on the cash basis in tax planning:

1. It is a simple method of reporting. Fewer records are necessary as inventory accounts need not be kept.

2. Taxes are postponed for the cash basis farmer who is in a period of year-to-year increases in inventory. He or she then has a tax advantage, particularly if tax rates remain constant or decrease. The advantage is less if tax rate increases are in prospect as the farm business moves toward maturity and cash sales of products accumulated during years of lower taxes materialize. However, if decreases in tax rates are expected, the opportunity for tax savings increases, as products accumulated during years of higher tax rates are sold in years of lower tax rates.

3. The cash method provides more flexibility for adjusting income from year-to-year when wide variations may occur in prices and production rates, despite the tendency of the accrual method to automatically make these types of adjustments each year through beginning-of-year and end-of-year inventories.

4. Sales of raised breeding, dairy, sporting and work stock, treated as capital assets, result in a lower tax liability if you use the cash method. This is because these animals have a zero cost basis when sold, while under the accrual method the cost basis for determining gain is the last inventory value if left in inventory (or salvage value plus remaining depreciation if capitalized). In addition, if animals are capitalized under the accrual method, any depreciation taken is now recaptured as ordinary income.

2. Accrual Method

When you file your tax return on the accrual method, gross

farm income includes: (1) all income from sales made during the year, regardless of when payment is received; (2) all miscellaneous income regardless of source; and (3) the inventory value of all livestock, crops and supplies on hand and not sold at the end of the year.

a. Some advantages of the accrual method include:

1. Farmers who store some crops and sell them in the next year level out their income to some extent by including the production of a given year in the closing inventory of the year in which most of the costs of production were incurred. They may thus avoid having to pay income tax on the sales of more than one year's production in one year. An example would be two calf crops or some grain held over plus the current year's production.

2. Young farmers starting with a small operation or with inadequate financing may wish to use the accrual method to keep their income and taxes on a more current basis rather than postpone taxes until the year in which production is sold. They may need to count the increase in the values of unsold production as income to offset cash farm operating expenses, allowable non-business deductions and personal exemptions, or to avoid showing a net operating loss.

3. Social Security Benefits are often augmented by using the accrual system. The application of Section 1231 to sales of raised breeding, dairy, sporting and work stock excludes the proceeds from such sales from self-employment income under the cash method. Further, all costs of raising are deducted from self-employment income. But with the accrual method, the requirement of capitalization of "normal costs" of raising Section 1231 animals in the year of sale tend to increase self-employment income.

C. Investment Credit

Probably the most effective tax management tool of all is the 10% investment credit, because it reduces tax on a dollar-for-dollar basis.

If you acquire new or used depreciable property such as machinery, equipment, or breeding livestock for use in your farm business you probably qualify for the investment credit. In order to qualify, the property must be depreciable, must have a useful life of at least 3 years and must be placed in service during the year. However, the property must have an expected useful life of 7 years or more to qualify for the 10% credit on the entire investment. If the useful life is 5 or 6 years, only two-thirds of the investment qualifies for the credit. For property with a useful life of 3 or 4 years, the credit is allowed on only one-third of the investment. The useful life used for computing the investment credit must be the same as the life used for calculating depreciation.

1. Breeding Livestock

All purchased dairy or breeding livestock, except horses, are

eligible for investment credit. However, a special rule states that if substantially identical livestock have been sold during a one-year period beginning 6 months before other livestock are acquired, the cost of the acquired livestock is to be reduced by the amount realized on the sale of the identical livestock.

For example, if a farmer sells breeding cattle for $10,000, and within 3 months acquires other substantially identical breeding cattle for $15,000, the amount qualifying for investment credit would be $5,000.

For purposes of investment credit, breeding or dairy livestock would be considered as new property if the animals had not been used for breeding or dairy purposes before they were purchased. In a case where the animals had already been used for breeding or dairy purposes before the time of purchase, the animals would be considered as used property for investment credit purposes.

D. Tax Mangement Tips

1. To spread income and reduce taxes, pay reasonable wages to your children for farm work actually done by them, so long as there is a true employer-employee relationship. Assign definite jobs or responsibilities, agree on wages and pay them regularly by check as you would any other employee. Wages paid by parents are not subject to social security tax until the child reaches age 21. Neither are they counted on the child's social security record.

2. A child, under 19 or regularly enrolled in school 5 months or more in the year or in an accredited on-farm training program, can earn over the personal exemption ($750 in 1977). The parent can also receive an exemption for the child as a dependent as long as he pays for over one-half of the child's support. This makes possible two personal exemptions, one by the child if he earns over the exemption and files his own return, and the second as a dependent of his father. An individual's total tax-free earnings may be $2,950 in 1977 (the personal exemption of $750 and the standard deduction of $2,200).

3. An individual's wages are not subject to withholding of federal income tax if he or she certifies to his or her employer that he or she expects to have no federal income tax liability for the current year and had no income tax liability for the preceding year.

4. Give income producing property to children: that is, land, cattle, machinery, and let them report income from their work and capital. Family partnerships and farm corporations through stock transfers are sometimes used to do this. It is another way to spread family income over the lower brackets. Remember, gifts and partnerships must be legally sound to achieve tax savings.

5. If you are age 63 or 64, postpone income to age 65 to take advantage of the double personal exemption. Persons approaching retirement, however, may want to maintain income as near as possible to the maximum for soical security in these years ($16,500 in 1977).

6. At retirement, plan for more income from rents, dividends, interest, and pensions which qualify for the retirement income credit. This may save income tax as earned income is replaced by investment income.

7. Do not hold breeding stock used for production of market livestock too long. By selling sows after only one or a few litters, a higher percentage of hog sales will qualify for capital gain treatment over a period of years and reduce taxes.

8. Buy machinery and equipment in years of high income and take the additional 20% first year depreciation in addition to the regular depreciation allowable.

9. If you are selling timber, be sure to handle the sale so the gain can be reported as a capital gain. (See the Farmer's Tax Guide for details on different methods of selling timber.)

10. Manage sales of farm machinery, equipment, land and breeding and dairy stock. These can result in capital gains or ordinary losses. Cattle and horses must be held for 24 months or more, other livestock for 12 months or more, to qualify for capital gains treatment. Other depreciable items must be held more than 9 months.

11. Plan personal deductions. Many medical expenses or contributions that are normally spread over 2 years can be paid in one year and itemized as deductions. In the next year, the standard deduction, may be taken if higher than actual deductions. Be sure to choose the largest of the standard deduction, or your actual itemized deductions.

12. Plan to have enough income to use up personal deductions and exemptions that are allowed (see Smith example on page 6, Farmer's Tax Guide).

13. Avoid wide fluctuations in income from one year to the next (see Jones example on page 6, Farmer's Tax Guide).

14. Understand the effect of rapid or accelerated depreciation that is permissible on newly acquired machinery, equipment and improvements. Decide whether to recover costs quickly or spread them out against farm production over a longer period.

15. Installment sales of property can be used to spread income over a period of years and thus avoid high income in one year.

16. Check for loss years in the past. Is there an unused net operating loss deduction? If you file for a refund, be sure to have records to substantiate your claim.

17. Ten percent investment credit available on qualified property, placed in service after January 21, 1975.

18. Several alternative courses of action are available to defer payment of taxes. Land development costs can be used as current expenses up to certain limits, additional first year depreciation and accelerated methods of depreciation are other examples.

19. Filing a tax estimate by January 15 relieves the pressure on farm tax consultants and improves the completeness and accuracy of tax returns, generally saving the taxpayer taxes. In addition, it frees records for use with lenders to establish farm lines of credit early in the year.

20. Gifts of farm products to charity: a cash basis taxpayer can no longer take a fair market value deduction since the raised products have a zero cost basis. Therefore, there is nothing to deduct.

21. To insure a record of all income and expenses have a checking account in which to deposit all receipts and to pay all bills.

E. Tax Reporting Reminders

1. Be sure that CCC loans are not counted as income twice (in one year when borrowed and next year when crop is sold). Good inventory records will help insure this does not happen.
2. If you are using the cash method, deduct cost of purchased livestock lost, strayed, or stolen or which died during the year.
3. If you are using the accrual method, deduct all purchases of livestock. Make a "livestock number check" to see that the total number purchased, and born, in the beginning inventory equals the total number sold, died, and butchered, in the ending inventory.
4. Deduct the farm share of all auto and truck expenses, including licenses, insurance, etc.
5. Deduct as many auto, utilities, telephone, etc. expenses as actually used in the farm business (half is not enough in many cases).
6. Take allowable depreciation on improvements, machinery, equipment; and on purchased breeding, dairy and draft animals.
7. Keep records to insure deduction of easily overlooked items such as farm magazines, farm organization dues, bank service charges, business trips, portion of dwelling used for farm business, household supplies used for hired help and cash outlay to board hired workers.
8. Itemize on bank deposit slips all gifts, borrowings, savings bonds cashed, etc., so that they will not be considered taxable income.
9. Keep records of all medical, dental and hospital bills, including premiums for accident and health insurance.
10. Establish a charge account at a hardware store, elevator or other places where considerable business is done during the year. Pay account by check upon receipt of monthly statements. This prevents omitting many small items which might otherwise be paid by cash and receipts lost.
11. Keep exact records of date of purchase, cost and date of sale on all items purchased for resale.
12. Pay bills by check whenever possible. Record all cash expenditures at once in an account book. Always get "receipts" for farm expenses paid by cash. Obtain a bank statement each month and check it against the farm account book.
13. Do not include in income any indemnity for diseased animals if payment has been or will be used to buy "like of similar" animals within 2 years for replacements.
14. Withhold and deduct social security tax paid on wages of hired help. When withheld tax plus an equal amount representing your employer tax amounts to $200, they must be deposited currently.

15. Do not report as income capital gains on the sale of your dwelling, if you plan within 18 months to build and occupy another dwelling that will cost as much or more than the selling price of your present dwelling.

16. Keep all "paid" receipts, invoices, cancelled checks, etc., for at least 5 years, including checks in payment of income taxes. Receipts for purchase of items on which investment credit was taken should be kept for 7 years (or until the property is disposed of) as evidence of purchase or cost of improvements for as long as you hold the property.

17. Remember that if you have income subject to tax, every dollar of cost not deducted will result in unnecessary income taxes.

F. Income Averaging

1. Who Is Eligible?

The income averaging method of computing tax is available only to individuals. Corporations, trusts, and estates do not qualify.

Two tests must be met to qualify for income averaging. One test relates to citizenship or residence and the other test relates to the taxpayer's support.

To be eligible to compute tax by the income averaging method, the taxpayer must have been a citizen or a resident of the United State throughout the computation year and the base period years. The computation year is the year for which the tax is being computed and the four tax years immediately preceding the the base period years.

The taxpayer must have furnished 50 percent or more of his support during each of the four base period years. If a joint return is filed, both the husband and wife must meet the support test. There are some exemptions to the support test. They are listed in the Internal Revenue Service Publication No. 506, "Computing Your Tax Under the Income Averaging Method."

2. Basically, income averaging permits part of an unusually high taxable income to be taxed in lower brackets, thus reducing the overall amount of tax due. The first part of the taxable income up to 120 percent of the average of the base period income (four previous years) is taxed at normal tax rates. The averageable income, which is the taxable income for the computation year that is above the 120 percent level, is then all taxed at the same rate that the first one-fifth of it would normally be taxed. In effect, this lowers the tax bracket for the upper part of the taxable income and provides some tax saving.

The follwoing five-step approach can be used to determine if income averaging will be effective in lowering taxes:

a. Estimate taxable income for the computation year. Taxable income is adusted gross income minus deductions and personal exemptions.

b. Add taxable income for the four previous years.

c. Divide the answer to step B by the number four to determine

a 4-year base period average.

d. Multiply the answer in step c by the number 1.2.

e. Subtract the answer in step d from the taxable income of the tax computation year, step a. This amount is subject to income averaging. If this total is more than $3,000 the income averaging method can be used.

V. INSTRUCTIONAL MATERIAL

A. The Estimate Worksheet

The tax estimate worksheet on the next page can be used throughout the yaar in planning farm business and tax management strategies. If you do not use it throughout the year, its use in November to plan tax savings in December is strongly advised.

VI. REFERENCES

Doane's Tax Guide for Farmers, Doane's Agricultural Service.

Farmer's Tax Guide, Publication 225, Internal Revenue Service.

Income Tax Management for Farmers, Cooperative Extension Service, Kansas State University, Manhattan.

"Highlights of Tax Reform-Act of 1976," Doane's Agricultural Report. Vol. 39, No. 48-5, pp. 419-420.

"Investment Credit Highlights," Oklahoma State University Extension Facts. No. 724.

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University.

Income Tax Estimate Worksheet

RECEIPTS:		Amount to Date	Estimated Rest of Year	Estimated Year's Total
Sales of products raised* and miscellaneous receipts:				
Cattle, hogs, sheep and wool, etc.		$_____	_____	_____
Poultry, eggs and dairy products		$_____	_____	_____
All crop sales		$_____	_____	_____
Custom work, prorations and refunds agriculture program payments		$_____	_____	_____
Total sales and other farm income	(1)	$_____	_____	_____
Sales of purchased market livestock	†$ _____		_____	_____
Purchase cost (subtract)	‡$ _____		_____	_____
Gross profits on sales of purchased livestock	†(2)	$_____	_____	_____
Gross farm profits (Item 1 + 2)	(3)	$_____	_____	_____

FARM EXPENSES:			
Labor hired	$_____	Veterinary, medicine	$_____
Repairs, maintenance	_____	Gasoline, fuel, oil	_____
Interest	_____	Storage, warehousing	_____
Rent of farm, pasture	_____	Taxes	_____
Feed purchased	_____	Insurance	_____
Seed, plants purchased	_____	Utilities	_____
Fertilizers, lime	_____	Freight, trucking	_____
Machine hire	_____	Conservation expenses	_____
Supplies purchased	_____	Other	_____
Breeding fees	_____	Other	_____

Total cash farm expenses	(4)	$_____	_____	_____
Depreciation on machinery improvements, dairy and breeding stock	(5)	$_____	_____	_____
Total deductions (Item 4 + 5)	(6)	$_____	_____	_____
Self employment farm income (Item 3 less item 6)	‡(7)	$_____		
Net taxable gain from Schedule D (Sales of dairy and breeding stock, machinery and other capital exchanges)	(8)	$_____	_____	_____
Taxable non-farm income	(9)	$_____	_____	_____
Adjusted gross income (Item 7 + 8 + 9)	(10)	$_____	_____	_____
Less: $3,200 standard deduction** or itemized deductions§	$_____		_____	_____
$750 x _____ personal exemptions***	$_____		_____	_____
Total non-business deductions and exemptions	(11)	$_____	_____	_____
Taxable income (Item 10 less item 11)	(12)	$_____	_____	_____
Estimated income tax (calculated from applicable tax computation table or rates)	(13)	$_____	_____	_____
Estimated self-employment tax (Item 7 x current rate)	(14)	$_____	_____	_____
TOTAL TAX (Item 13 + 14)	(15)	$_____	_____	_____
Less Credits: allowable investment credit and carryover, gas tax, income tax withheld and estimated tax paid	(16)	$_____	_____	_____
Estimated tax due (Item 15 less item 16)	(17)	$_____	_____	_____

† Omit for accrual method.

‡ For accrual method adjust for change in inventory and new livestock purchases.

§ Use itemized deductions if larger.

* For accrual method include sales of all livestock.

** Limit for 1977 Joint Return, see current tax regulation for subsequent years.

*** Exemption for 1977, see current tax regulation for subsequent years.

FARM MANAGEMENT I

UNIT 11: KEEPING LIVESTOCK AND CROP ENTERPRISE RECORDS.

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to complete livestock and crop enterprise records for their farm and use them to their advantage.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Complete livestock and crop enterprise records for his farm.

B. Determine income from a specific enterprise.

C. Determine which enterprises are the most profitable for the total farm.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

B. Student:

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University.

FARM MANAGEMENT I

UNIT 12: DETERMINING THE ENDING INVENTORIES

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to determine ending inventories for a farm business.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. List items counted in ending inventories.

B. List methods of valuing assets.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

B. Student:

1. Complete an ending inventory.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Determining Ending Inventory Values

No problem exists for determining the ending inventory values for: grain, hay and supplies, market, animals, and raised breeding stock since these values are determined by multiplying the number of amount on hand at the end of the year times the current market value or an assigned value. But a different situation exists in the case of: purchased breeding stock; machinery and equipment; and buildings and equipment where the ending inventory figures are affected by whether items were sold or purchased during the year and also by the amount of annual depreciation charged off.

To determine the net change in inventory for: grain, hay and supplies, market animals, and raised breeding stock, the beginning inventory is subtracted from the ending inventory. For these grouped assets, if the ending inventory is larger than the beginning inventory there would be a net increase or gain.

For purchased breeding stock, machinery and equipment, and buildings and equipment, the ending inventory value is determined by adding the beginning inventory and the purchases made during the year together and then subtracting the sale of chattels and depreciation.

For example:

Beginning Inventory	+ Purchases	- Sales	- Depreciation	= Ending Inventory Value
$1000	+ $1000	- $300	- $200	= $1500

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Farm Records, A Management Tool, Ohio Agricultural Education Curriculum Materials Service, Ohio State University.

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriuclum Materials Service, Ohio State University.

FARM MANAGEMENT I

UNIT 13: CLOSING THE FARM ACCOUNT BOOK

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to close out the Kansas Farm Account Book.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Determine net income on the cash basis.

B. Determine net income on the accrual basis.

C. Complete an end of the year net worth statement.

D. Complete the "Farm Business Analysis" page of the Kansas Farm Account Book.

E. Complete the "Supply and Disposal" page of the Kansas Farm Account Book.

F. Estimate income tax for the year.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Work a sample in class showing how to close the Kansas Farm Account Book.

B. Student:

1. Close the Kansas Farm Account Book for your farm.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University.

FARM MANAGEMENT I

UNIT 14: COMPLETING THE K-MAR 105 FARM BUSINESS SUMMARY

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to complete the K-Mar 105 Farm Business summary.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Complete a K-Mar 105 Farm Business summary for their farm.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide students with a sample of the K-Mar 105 computer analysis summary.

B. Student:

1. Complete an analysis summary.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

A. "K-Mar 105 Electronic Analysis" (forms for analysis).

VI. REFERENCES

"K-Mar 105 Electronic Management System" KSU Cooperative Extension Service, Manhattan.

FARM MANAGEMENT II

UNIT 1: USING THE INCOME STATEMENT AND CASH FLOW AS FINANCIAL MANAGEMENT TOOLS

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to complete an income statement and a cash flow statement and utilize them for financial management.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Complete a cash flow statement for his farm.

B. Complete an income statement for his farm.

C. Explain the uses of these as farm management tools.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Hand out a sample income statement.

B. Student:

1. Complete an income statement for your farm.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Income Statement

The items that are included in an income statement of a farm business can be classified into four major headings:

1. Farm Business Receipts
2. Change in Inventory Value of Feed, Supplies, Grain and Livestock
3. Farm Operating Expenses
4. Depreciation

B. Cash Flow Projection

The Cash Flow Projection Form included in the Instructional Materials section of this unit has been developed to be used to study the short-run feasibility of a business change. It has been designed specifically to project the operating loan balance of a farm business for each period.

Information for preparing a cash flow projection may come from many sources including:

1. Records of actual cash flow or other farm records from past years.
2. Tax returns.
3. Publications listing investment requirements for crops and livestock enterprises (to determine projected periodic cash payments).
4. Publications listing feed requirements for livestock enterprises.
5. Price and yield estimates.

V. INSTRUCTIONAL MATERIAL

A. Cash Flowing Into Farm Business (master for transparency).

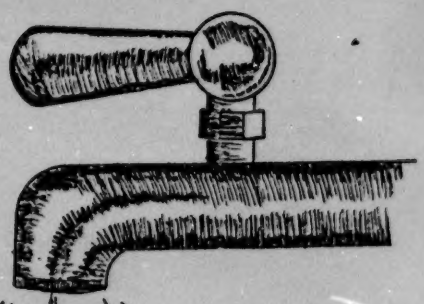
B. Cash Flow Projection for Loan Determination (form for use in studying cash flow).

VI. REFERENCES

"Cash Flow Projection for Operating Loan Determination" Kansas Farm Management Handbook, MF-275, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

"Income Statement - A Farm Financial Management Tool" Kansas Farm Management Handbook, MF-294, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

CASH FLOWING INTO FARM BUSINESS

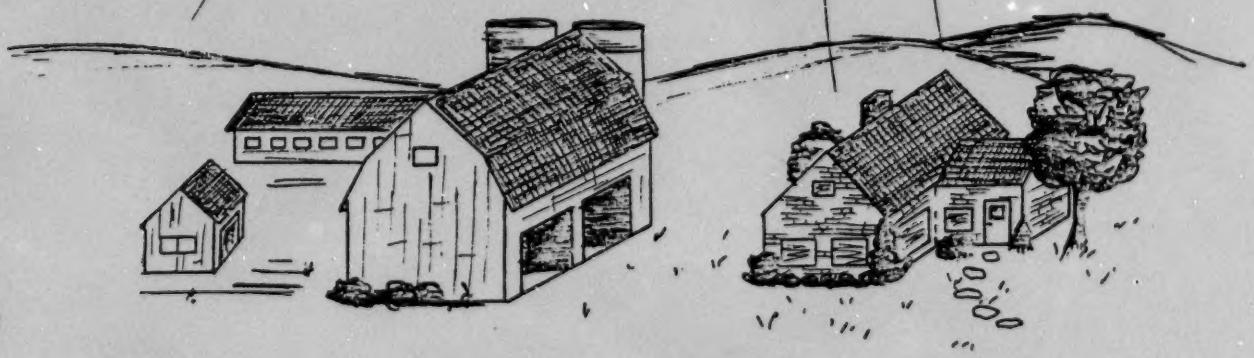


TOTAL CASH RECEIPTS

		gain	loss	net
±	Capital Gains or Losses			
	raised breeding stock	___	___	___
	purchased breeding stock	___	___	___
	machinery and equipment	___	___	___

		inc.	dec.	net
±	Net Inventory Change			
	raised breeding stock	___	___	___
	market livestock	___	___	___
	grain, hay, supplement	___	___	___
	supplies and fertilizer	___	___	___
–	feeder livestock purchased	___	___	___

GROSS INCOME _____



CASH FLOW PROJEC

Name _____ Address _____ Date Prepared _____

	CASH INFLOW ITEMS	Annual Estimate	Jan	Feb	Mar	Ap
1	Livestock: CATTLE	$ 25,400			$25,400	
2	MARKET HOGS	46,200		$ 12,500		
3	SOWS	3,200	$ 800			
4	Crops: WHEAT	11,000			6,000	
5	GRAIN SORGHUM	6,300				
6						
7	Custom (machine) work					
8	Patronage dividends					
9	Agri. Program payments	3,000				
10	Other farm income:					
11						
12						
13						
14	TOTAL FARM CASH INFLOW (Add lines 1-13)	$ 95,100	$ 800	$ 12,500	$31,400	$
15	Non-farm business income & wages					
16	Non-farm dividends & interest					
17	Gifts, Inheritance & other non-farm income					
18	TOTAL CASH INFLOW (Except Loans) (Add lines 14-17)	$ 95,100	$ 800	$ 12,500	$31,400	$
	CASH OUTFLOW ITEMS					
19	Labor hired	$ 2,300			$ 100	$
20	Repairs, maintenance	4,300	$ 300	$ 500	1,000	
21	*Interest	6,300		750	800	
22	Rent of farm, pasture	1,200				1,2
23	Feed purchased	15,000		2,000	5,000	
24	Seed, plants purchased	8,100			1,000	5
25	Fertilizer, lime	3,300			2,300	
26	Machine hire	1,300			100	
27	Supplies purchased					
28	Livestock expense	2,700		300	300	
29	Gasoline, fuel, oil	2,300			400	
30	Taxes	2,700				
31	Insurance	500			500	
32	Utilities	600	80	70	50	
33	Conservation and land clearing expenses	700				7
34	Other: FARM DEP. FEES; RADICATIONS, ETC.	400	400			
35						
36						
37	TOTAL FARM CASH OPERATING EXPENSES (Add lines 19-36)	$ 45,700	$ 780	$ 3,620	$ 11,550	$ 2,0
38	*Livestock purchases	$ 11,000				
39	*Machinery, equipment (cash payments, principal)	4,000		2,000		
40	*Buildings (cash payments, principal)	4,800				
41	*Land purchases (cash payments, principal)	2,500				
42	TOTAL FARM CASH OUTFLOW (Add lines 37-41)	$ 76,000	$ 780	$ 5,620	$ 11,550	$ 2,0
43	Family living expenses	8,000	$ 700	$ 600	$ 600	$ 6
44	State income tax	400		400		
45	Federal income tax & social security	3500		3,500		
46	Non-farm business expenses					
47	Other non-farm & family cash outflow					
48	TOTAL CASH OUTFLOW (Lines 42-47) (Except Operating Loan Payments)	$ 87,900	$ 1,480	$ 10,120	$ 12,150	$ 3,6
49	**NET CASH FLOW (+ or -) (Line 18 minus line 48) (Except Loan Receipts and Operating Loan Payments)	$ 7,200	$ - 680	$ 2,380	$ 19,250	$ -2,
50	PROJECTED OPERATING LOAN BALANCE*** (Oper. Loan Carried Over From Last Period $ 18,000)	XXXX	$ 18,680	$ 16,300	$ 2,950 (Surplus)	

*Principal payments on all loans not a part of this operating budget go on lines 38-41. All interest goes on line 21
**Add negative "Net Cash Flow" figures of each period to "Projected Operating Loan Balance" of previous period to arr
Operating Loan Balance" of previous period.
***The purpose of line 50 is to provide information for estimating the amount of operating borrowings needed in each pe
Note: To calculate the net cash flow for the farm business alone, subtract line 42 from line 2

ION FOR LOAN DETERMINATION

	May	June	July	Aug	Sept	Oct	Nov	Dec	Actual Cash Flow	
	ESTIMATED TOTAL CASH INFLOW									
	$ 200			$ 11,500			$ 11,000			1
			$ 800			$ 800				2
			5,000							3
		$ 6,300								4
										5
										6
										7
			3,000							8
										9
										10
										11
										12
										13
0	$ 11,200	$ 6,300	$ 8,800	$ 11,500		$ 800	$ 11,000			14
										15
										16
										17
2	$ 11,200	$ 6,300	$ 8,800	$ 11,500		$ 800	$ 11,000			18
	ESTIMATED TOTAL CASH OUTFLOW									
2	$ 400	$ 400	$ 200		$ 300	$ 400	$ 500	100		19
2	800	500	200		600	300	800	100		20
	2,000			$ 750			2,000			21
2										22
	2,000			2000			4,000			23
2								600		24
		300	400			500		4,000		25
										26
	300	200		400		600	400	800		27
		700		800			400			28
		4,350						4,350		29
										30
	40	30	30	40	40	50	60	70		31
										32
										33
										34
										35
										36
2	$ 4,940	$ 3,480	$ 830	$ 3,990	$ 940	$ 1,850	$ 7,260	$ 3,420		37
						$ 8,000				38
				$ 2,000						39
	2,400						$ 2,400			40
			$ 2,500							41
2	$ 7,340	$ 3,480	$ 3,330	$ 5,990	$ 940	$ 20,850	$ 9,660	$ 3,420		42
	$ 700	$ 600	$ 600	$ 800	$ 800	$ 600	$ 600	$ 800		43
										44
										45
										46
										47
2	$ 8,040	$ 4,080	$ 3,930	$ 6,790	$ 1,740	$ 21,450	$ 10,260	$ 4,220		48
2	$ 3,160	$ 2,220	$ 4,870	$ 4,710	$ -1,740	$ -20,650	$ 740	$ -4,220		49
	70	$ 5,490	$ 10,360	$ 15,070	$ 13,330					
2	ficit)	(Surplus)	(Surplus)	(Surplus)	(Surplus)	$ 7,320	$ 6,580	$ 10,800		50

t Projected Operating Loan Balance' for each period. Similarly, subtract positive 'net cash flow' figures from projected

. Tne cash inflow and outflow items above do not include receipt or use of operating loan

Example Income Statement of a Farm Business
(Accrual or Inventory Basis)

John P. Recorder

Jan. 1, 19___ to Dec. 31, 19___

FARM BUSINESS RECEIPTS				
Livestock Sales	(1A)	$ 80,740		
Less Livestock Purchases	(1B)	13,065		
Net Livestock Sales			(1) 67,675	
Crop Sales			(2) 12,490	
Agricultural Program Payments			(3) 4,260	
Other Receipts			(4) 2,175	
Total Receipts (Add lines 1 thru 4)			(5) 86,600	
Change in Inventory Value of feed, supplies, grain and livestock			± (6) 1,900	
GROSS FARM INCOME (Line 5 ± Line 6)				(7) $ 88,500
FARM OPERATING EXPENSES				
Labor Hired			(8) 2,560	
Equipment and Machinery Repairs			(9) 5,470	
Interest			(10) 8,545	
Cash Rent			(11) 3,870	
Feed Purchased			(12) 18,800	
Crop Expense, Seed, Etc.			(13) 2,765	
Fertilizer and Lime			(14) 4,150	
Machine Hire			(15) 1,285	
Livestock Expenses			(16) 3,305	
Gasoline, Fuel and Oil			(17) 4,460	
Real and Personal Taxes			(18) 2,250	
General Insurance			(19) 450	
Utilities			(20) 540	
Conservation Expense			(21) 680	
Farm Org. Fees, Publications, Etc.			(22) 585	
Total Oper. Exp. (Add Lines 8 thru 22)			(23) $ 59,715	
DEPRECIATION EXPENSES				
Machinery and Equipment			(24) $ 2,725	
Motorized Equipment			(25) 3,000	
Buildings			(26) 940	
Other Depreciation			(27) —	
Total Deprec. Exp. (Add lines 24 thru 27)			(28) 6,665	
TOTAL FARM EXPENSES (Add lines 23 & 28)				(29) $ 66,380
NET FARM INCOME (Line 7 — line 29)				(30) 22,120

FARM MANAGEMENT II

UNIT 2: USING THE BALANCE SHEET AS A FINANCIAL MANAGEMENT TOOL

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to complete a balance sheet and evaluate the financial status of his farm from it.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Fill out a balance sheet for his farm.

B. List 3 uses of a balance sheet.

C. Determine ratios using the balance sheet.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Hand out an example of a balance sheet to students.
2. Hand out a blank balance sheet to students.

B. Students:

1. Complete a balance sheet for your farm.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Balance Sheet

A balance sheet is a statement of the financial condition of a business at a specific time. It is one of the principal reports provided by a good accounting system. The balance sheet shows what is owned in a business, what is owed, and the owner's share or net-worth of the business. By comparing past balance sheets with the present balance sheet, the growth or decline of assets, loans and net worth of a business can be determined.

B. Uses of the Balance Sheet

The balance sheet has many important uses. Lending agencies use balance sheets to evaluate the financial position of most loan applicants. The balance sheet statement also can be extremely useful to the owner of the business, indicating the state of business net worth. Comparison of balance sheets over time will show how much the business net worth is growing or decreasing. A balance sheet can be used by the owner of a business to support a request for borrowed funds.

The balance sheet gives information on how best to meet loans. If loans are due in a short time, cash will be needed to pay them. If the sale of current assets will not raise sufficient funds and the loan cannot be renewed, perhaps a long-term loan can be negotiated on the basis of long term asset values.

C. Evaluating the Balance Sheet

A balance sheet of a farm business can be evaluated by:

1. Comparison to balance sheets of the same business in previous years.
2. Comparison to balance sheet data from other farms.
3. Use of ratios.
4. Use of "common-size" statement.

V. INSTRUCTIONAL MATERIAL

A. Example Balance Sheet of a Farm Business.

VI. REFERENCES

"Balance Sheet - A Farm Financial Management Tool" Kansas Farm Management Handbook, MF-291, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

EXAMPLE

COMMON-SIZE STATEMENT OF A FARM BUSINESS

John P. Recorder

January 1, 19____

ASSETS

	Amount	Percent
CURRENT		
Cash on Deposit in Bank	$ 2,000	1%
Livestock	29,000	13%
Crops on Hand	22,000	10%
Fertilizer & Supplies on Hand	2,000	1%
TOTAL CURRENT FARM ASSETS	$ 55,000	25%
INTERMEDIATE		
Autos and Trucks	$ 5,400	2%
Machinery and Equipment	27,500	12%
TOTAL INTERMEDIATE FARM ASSETS	$ 32,900	14%
LONG TERM		
Farmland	$120,000	54%
Farm Improvements (Net)	15,000	7%
LONG TERM FARM ASSETS	$135,000	61%
TOTAL FARM ASSETS	$222,900	100%

LOANS

CURRENT		
Notes Payable	$ 22,000	10%
Int-Term Due within 12 months	2,000	1%
Long-Term Due within 12 months	4,000	2%
TOTAL CURRENT FARM LOANS	$ 28,000	13%
INTERMEDIATE		
Notes Payable	$ 3,200	1%
TOTAL INTERMEDIATE FARM LOANS	$ 3,200	1%
LONG-TERM		
Mortgages on Farm Real Estate	$ 55,500	25%
TOTAL LONG-TERM FARM LOANS	$ 55,500	25%
TOTAL FARM LOANS	$ 86,700	39%
NET FARM WORTH	$136,200	61%
TOTAL FARM LOANS AND NET WORTH	$222,900	100%

FARM MANAGEMENT II

UNIT 3: FINANCIAL MANAGEMENT OF THE FARM BUSINESS

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to show an understanding of the basic principles of farm management.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Determine whether it is profitable to take out a loan in a given situation.

B. Determine the profitability of financial transactions.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

B. Student:

IV. OUTLINE OF ISNTRUCTIONAL CONTENT

A. Factors Affecting Debt Servicing Capacity

Many factors affect the debt servicing capability of each farm business. For this reason, it is not possible to state precisely the debt which can be carried with reasonable safety on any one farm. But certain important factors can be listed for consideration.

1. The following items should be considered when estimating the amount of debt which can be repaid from net income.
   a. Net income above family living costs available for servicing the debt.
   b. Length of repayment period.
   c. Interest rate.
   d. Stability of income.
   e. Age and health of operator.

2. The following items are of concern in relation to all types of debts.

They may be of greatest concern when considering debts to be repaid from gross sales.

a. Ratio of total liabilities to net worth.

b. Ratio of current liabilities to current assets.

c. Skill and experience of operator.

A. Factors Affecting Amount of Debt to be Repaid from Net Income

1. Net Income Available

Consider the net income above family living costs which can be used for this debt repayment.

Hopefully, the new investment for which the debt was incurred will produce additional net income. This may be a year or more in developing. It often takes longer than expected to get a new or enlarged project to operate at a profitable level. All family living expenses must be met before interest and principal on the debt can be paid.

2. Length of Repayemnt Period and Rate of Interest

These two points are both important. The longer the repayment period and the lower the rate of interest, the greater will be the debt which can be carried by any certain level of net income.

3. Dependability of Income

The income risk varies widely between different projects. Markets, weather, and disease all are risk factors. Some products have highly variable market prices. As an example - hogs vary from far above average to far below average prices within short periods.

Where heavy debt loans are necessary, it is especially important to reduce risks as much as possible. The greater the weather or price risk on a project, the more conservative the amount of the loan should be. Where insurance can be used to reduce risk, its use should be considered. And finally, the greater the risk the greater the importance of doing the best job possible. When everything is done well and on time, prospects for success are greatly improved and risk is reduced.

4. Age and Health of Operator

These factors are of course relative ones. Younger more ambitious operators who also have the advantage of good health, can expect to meet fairly heavy debt repayment demands to better advantage than anyone lacking in good health and vigor.

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

"How Much Debt Can a Farm Carry," Kansas Farm Management Handbook, MF-288, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

FARM MANAGEMENT II

UNIT 4: FINANCIAL RATIOS AS A CREDIT TOOL

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to determine financial ratios and explain how to use them as a credit tool.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Define financial ratio.

B. List and be able to define the financial ratios used on the farm.

C. Explain how financial ratios relate to profitability.

D. List two uses of financial ratios.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Give the students records from a sample farm and have them figure various financial ratios.

B. Student:

1. Figure financial ratios for your farm.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Financial Ratios

A financial ratio is simply a comparison of two measurements of a business to each other. For example, a measurement of income may be compared to a measurement of size. The two measurements are expressed in terms of a ratio of one number to another number. The measurements can also be expressed in terms of the percent that one is to another. For example, a farm business with a net farm income of $25,000 and a gross farm income of $100,000 has a net income to gross income ratio of 1:4. Expressed in percentage terms this same farm business has a net income that is 25 percent of gross income.

B. Ratios

The ratios that relate to the adequacy of capital in the farm business are calculated from balance sheet data. These ratios furnish an indication of the asset and net worth protection of borrowed funds. They are indicators of the soundness of the business.

A classic measure of financial condition used in financial statement analysis is the current ratio:

1. Current Ratio = $\frac{\text{Current Loans}}{\text{Current Assets}}$

Current assets are those assets that "turnover" in a normal year's operation. Examples are crops held for sale or feed, livestock held for sale, cash on hand or in the bank, and accounts receivable. Current loans are debts that come due within the year. They include portions of intermediate and long term debts that are due in the present year's business.

Another ratio that relates adequacy of capital is the intermediate ratio:

2. Intermediate Ratio = $\frac{\text{Intermediate Loans}}{\text{Intermediate Assets}}$

Intermediate assets are those assets that are used mainly to support farm production. Unlike current assets, they are not expected to be sold in the normal annual business process. Intermediate assets include machinery, equipment and stock in cooperatives. Intermediate term loans ususlly are for periods of one to seven years. They are loans on items that are productive over more than one period of production. Intermediate term loans consist of notes on machinery and equipment purchases.

A third adequacy of capital ratio is the long term ratio:

3. Long Term Ratio = $\frac{\text{Long Term Loans}}{\text{Long Term Assets}}$

Long term assets are needed to produce income but may not be easily converted to cash in the ordinary business process. They include land and buildings. Long term loans include land contracts and mortgages on land and farm improvements.

The long term ratio relates the long term loans to the long term assets.

The current and intermediate loans and the current and intermediate assets are combined and related to each other in the form of the current and intermediate ratio:

4. Current and Intermediate Ratio = $\frac{\text{Current and Intermediate Loans}}{\text{Current and Intermediate Assets}}$

Current and intermediate assets consist largely of livestock, feed, grain, supplies, and machinery. These assets are considered as available security by lending institutions and are used by them in "securing" a debt. The current and intermediate ratio is useful in relating the available security to the current and intermediate loans.

Combining all of the loans and all of the assets makes possible the calculation of the total ratio:

5. Total Ratio = $\frac{\text{Total Loans}}{\text{Total Assets}}$

This ratio shows the relationship of all loans to all assets.

A final ratio that relates adequacy of capital is the debt to worth ratio:

6. Debt to Worth = $\frac{\text{Total Loans}}{\text{Net Worth}}$

The debt to worth ratio relates the total debt to the net worth of the business. This ratio compares the creditor's contribution of capital (total loans) to the farmer's contribution (net worth).

C. Profitability Indicators

An effective ratio that relates profit to volume of business is the net income to gross income ratio:

1. Net Income to Gross Income Ratio = $\frac{\text{Net Farm Income}}{\text{Gross Farm Income}}$

Another ratio that relates a measure of profit to a measure of size is the rate of return to capital managed ratio:

2. Rate of Return to Capital Managed = $\frac{\text{Return to Capital}}{\text{Total Capital Managed}}$

The rate of return to total assets ratio is similar to the rate of return to capital managed except the value of rented land is excluded from the total capital managed. The return to capital is then related to total assets:

3. Rate of Return to Total Assets = $\frac{\text{Return to Capital}}{\text{Total Assets}}$

The return to net worth capital related to the net worth of the farm business forms the rate of return to net worth ratio:

4. Rate of Return to Net Worth = $\frac{\text{Return to Net Worth Capital}}{\text{Net Worth}}$

D. Uses of Financial Ratios

It is difficult to establish a minimum or maximum ratio that all farm businesses should meet for each of the financial ratios. Some general statements can be made. A current ratio of 1:2 would be considered to be relatively strong by most farm lenders. A current ratio of 1:1.5 would also be acceptable to farm lenders on many of their customers who showed other favorable financial ratios. Certainly, anything below a 1:1 ratio would not be favorable because sale of all current assets would not cover all of the current loans.

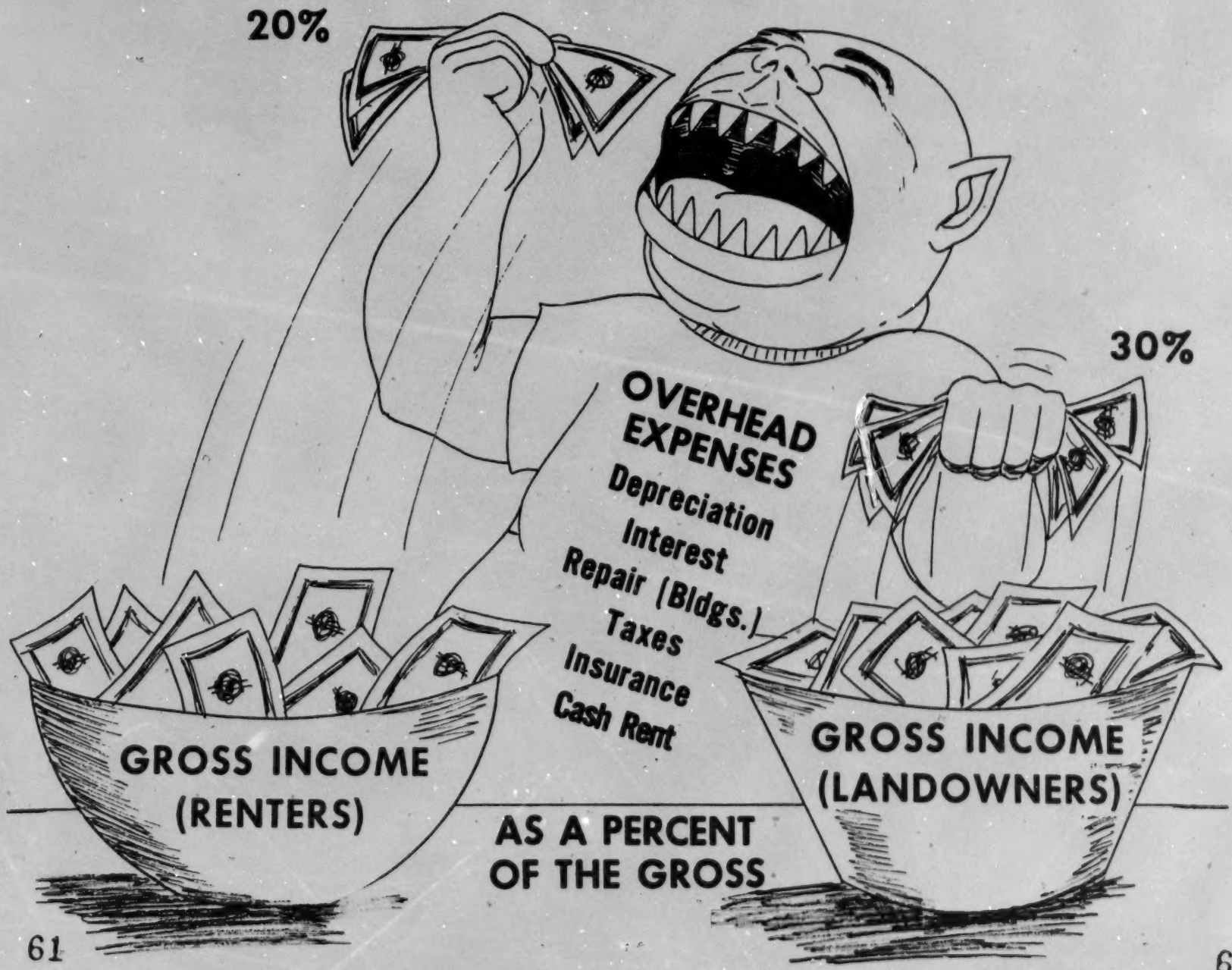
V. INSTRUCTIONAL MATERIAL

A. Operating Ratio (transparency master).

B. Practices Causing Variation in Overhead and Operating Ratios (transparency master).

VI. REFERENCES

"Financial Ratios Used in Farm Financial Management" Kansas Farm Management Handbook, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.


20%
30%
OVERHEAD EXPENSES
Depreciation
Interest
Repair (Bldgs.)
Taxes
Insurance
Cash Rent
GROSS INCOME (RENTERS)
GROSS INCOME (LANDOWNERS)
AS A PERCENT OF THE GROSS

OVERHEAD EXPENSES

- Depreciation
- Interest
- Repairs (Buildings & Improvements)
- Taxes
- Insurance
- Cash Rent

OVERHEAD EXPENSES ÷ GROSS INCOME = OVERHEAD RATIO

(a rule of thumb is 30%)

OPERATING EXPENSES

- Hired Labor
- Feed Purchased
- Farm Supplies
- Machinery Repairs
- Building, Fence, Telephone, etc.
- Repairs, Fuel, Oil, and Grease, etc.

OPERATING EXPENSE ÷ GROSS INCOME = OPERATING RATIO

(a rule of thumb is 40%)

Additional Information

1. Certain practices in the farming operation may cause a variation in the percentages in overhead and operating ratios.

   EXAMPLE:

   If a farmer trades equipment often this increases depreciation thus affecting overhead expenses.

   If a farmer keeps equipment a long time, the repair bills may be high and this will be reflected in operating costs.

2. Farm operators should analyze their business in terms of Family Labor and Management Income relative to volume of business.

   EXAMPLE:

   30% (overhead ratio) + 40% (operating ratio) = 70%

   100% - 70% = 30% Family Labor and Management Income

   30% X $10,000 Gross Income = $3,000 Family Labor and Management Income

   30% X $30,000 Gross Income = $9,000 Family Labor and Management Income

FARM MANAGEMENT II

UNIT 5: TYPES OF BANKING AND SOURCES OF CREDIT

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to define types of banking and sources of credit, as well as their advantages and disadvantages.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Explain the three sources of real-estate and nonreal-estate credit.

B. Identify the main sources of farm mortgage credit.

C. Identify the sources of production credit.

D. List five things a lender looks for in a borrower.

E. List four things a borrower should look for in a lender.

F. Determine what credit needs he has for his farm.

G. List three steps involved in obtaining credit.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Have a local banker speak about banking.

B. Student:

1. List all of the different types of credit you have received and the advantages and disadvantages of each.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Sources of Farm Credit

Real-estate and nonreal-estate credit are available from the investing public through three main channels--private, cooperative, and governmental.

1. Private lenders, as a class, are the oldest sources and most important in terms of amount of credit extended in agriculture.

2. Cooperative lenders had their beginning with the start of the Federal Land Bank System in 1917, set up by authority of the Farm Loan Act of the preceding year. The Federal Intermediate Credit Banks were established in 1923 by authority of the Agricultural Credit Act.

3. Governmental credit is available through agencies, such as the Farmers Home Administration, set up by an act passed in 1946.

B. Sources of Farm Mortgage Credit

1. Federal Land Bank

2. Life Insurance Companies

3. Banks

Banks invest a large part of the money deposited with them in order to add to their income. Most such investments are made in bonds which can be sold readily or in loans which come due in a short time. Some of their funds, however, may be used for loans on farm mortgages. The rates of interest and other terms and conditions of these loans vary with the individual banks.

4. Individuals

Very frequently when an older farmer or his widow sells a farm on contract, he or she accepts less than 30 percent of the purchase price in the form of a down payment. The remaining principal and interest is paid over a period of years to assure the seller a steady income. Many older people prefer to keep some of their money invested in farm land because they know more about such investments rather than buying stock or bonds in a distant corporation.

5. Farmers Home Administration

This agency makes direct farm mortgage loans and may insure such loans made by others.

C. Sources of Production Credit

Production or short-term credit is obtained principally from the following sources: merchants and dealers, individuals, banks, production credit associations, agricultural credit corporations, and Farmers Home Administration. In addition, certain specialized types of credit are available from other agencies, such as the Commodity Credit Corporation.

D. What a Lender Looks for in a Borrower

Five important factors that lenders consider when deciding whether or not to make a loan are: the man, financial position and progress, repayment capacity and program, purpose of the loan, and security or collateral. In recent years, repayment capacity has received an increasing amount of emphasis.

1. The Man

A lender wants a man (borrower) who has established a reputation for personal responsibility and integrity, and has demonstrated his ability as a farmer. If the applicant is not already known to him, the lender will investigate these personal characteristics thoroughly.

2. Financial Position and Progress

An applicant for a loan may be asked by the lender to furnish information regarding his financial position in the form of a net worth statement. This statement should show an itemized list of land, livestock, equipment, and other assets which the applicant owns; an itemized statement of all his debts; and his net worth, which will be the difference between the total assets owned and the debts owed. The applicant may be asked, also, to furnish similar statements for previous years in order to show changes over a period of time.

3. Repayment Capacity and Program

Repayment capacity has been receiving increased emphasis by lenders in recent years and undoubtedly will be one of the most important factors in lending in the future. The lender will generally check into the capacity of the borrower to repay the loan. This capacity will depend on whether or not the farm business is soundly organized and operated. The history of past earnings and the projected budgets and cash flows are very important in determining repayment capacity.

4. Purpose of Loan

The lender is vitally interested in what the proceeds of a loan are to be used for. This is true because the manner in which borrowed funds are used has a great deal to do with the earning capacity and the ability of the borrower to repay. Naturally those loans are most desirable where the money is to be used to increase the earning capacity of the applicant. Other loan purposes are to purchase feed, livestock, machinery, equipment, fertilizer, limestone, or to pay family living and miscellaneous operating expenses such as labor, taxes, and interest.

E. What a Borrower should Look for in a Lender

A farmer who needs to borrow should study carefully the sources from which he might obtain credit. He should get information about the services offered by each, and on this basis decide which can give him the credit best suited to his particular needs. Having made a selection, he should then proceed to establish a good credit rating with the lender and build up a working relationship over a period of years that will be mutually profitable.

There are four general aspects of the lender that the farmer will wish to investigate. They are general ability and character; lending policies; permanence and dependability; and experience.

F. Credit Needs

If you decide to borrow money on farm real-estate, the loan should be large enough to meet your needs. Five things should be kept in mind:

1. Do not borrow more than justified by the value of the farm.
2. Base your loan on year to year farm earnings.

3. Consider your financial situation.
4. Consider your management and operational efficiency.
5. Remember that outside income can be important in deciding how much you can borrow.

G. Three Important Steps in Obtaining Credit

If you are planning to use credit in your farming operations, you need to take these three important steps:

1. Consider and evaluate the benefits and risks involved in borrowing.
2. Decide how most effectively to organize and present your case to a possible lender.
3. Determine what specific agreements should be included after you have decided that you have a sound basis for credit.

V. INSTRUCTIONAL MATERIAL

A. Sources of Farm Credit (transparency master).

B. Now Rate Yourself (selfrating form for borrowing money).

VI. REFERENCES

"How Much Debt Can A Farm Carry," MF-288, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

"Determining the Cost of Credit," MF-260, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

"Using Farm Real Estate Loans," VAS 2033a, Vocational Agriculture Service, University of Illinois at Urbana, Champaign.

Factors Involved in the Borrowing Process. VAS 2028a, Vocational Agriculture Service, University of Illinois at Urbana-Champaign.

Determining Credit Needs of the Farm, Vocational Agriculture Service, University of Illinois at Urbana-Champaign.

Using Credit to Increase Farm Earnings, Vocational Agriculture Service, University of Illinois at Urbana-Champaign.

Planning for Repayment of Loans. Vocational Agriculture Service, University of Illinois at Urbana-Champaign.

Sources of Farm Credit, Vocatioanl Agriculture Service, University of Illinois at Urbana-Champaign.

SOURCES OF CREDIT FOR FARMERS

INCOME Of individuals, groups, organizations, etc. — minus — PRODUCTION EXPENSES and LIVING COSTS — equals — PROFITS and SAVINGS

↓

ASSEMBLED BY

Commercial Banks - Insurance Companies - Building and Loan Associations - Finance Companies - Federal Government - Individuals - and Others

↓

SAVINGS and EXPANSION of BANK CREDIT

↓

Provide

↓

Funds for Farm Loans

↓

Through

↓

FARM LENDERS

↓

PRIVATE	COOPERATIVE	GOVERNMENTAL
Commercial banks Insurance companies Finance companies Dealers, manufacturers, processors, etc. Friends, individuals, and others	Banks for Cooperatives Federal Intermediate Credit Banks and Production Credit Associations Federal Land Banks and Federal Land Bank Associations Credit Unions	Farmers Home Administration* Commodity Credit Corporation Rural Electrification Administration And others

↓

To

↓

FARM FAMILIES WHO BORROW

Normally only available as a source of credit to qualified farmers when credit is not available at reasonable rates and terms from non-governmental sources.

NOW RATE YOURSELF

The Farm Family (most important)

	Yes	No
1. Can we show that with the proposed loan we will earn enough extra profit to meet principal and interest payments?	☐	☐
2. Does every family member take part in making decisions and assist in farming operations according to his ability?	☐	☐
3. Do we keep well informed on new and improved farm practices that will increase farm earnings?	☐	☐
4. Are we careful managers — do we take good care of household equipment, machinery, and livestock?	☐	☐
5. Do we make it a practice to pay our bills promptly?	☐	☐
6. If we are ever unable to pay, do we promptly explain our situation to our lender and tell him just what we can do?	☐	☐
7. Do we try to get most of our credit from one source, so that we will not jeopardize our main line of credit for farm-production purposes?	☐	☐
8. Do we have leeway to cut our expenses when necessary without reducing income too seriously?	☐	☐
9. Do we welcome suggestions from our lender about our business and financial affairs?	☐	☐
10. Do we maintain a reserve (cash and liquid assets) large enough to meet minor emergencies, so that we won't have to ask our lender for concessions each time such an emergency arises?	☐	☐

The Land and Farming Plan

1. Have we developed a long-time program for our farm, and do we develop a farm plan for each year?	☐	☐
2. Is our farming unit (acreage and livestock program) large enough to carry a loan as well as provide income for the standard of living we want?	☐	☐
3. Do we have the farm power, labor, machinery, tools, and equipment needed to farm for maximum profit?	☐	☐
4. Is our farm program such that we can plan to sell our crops and livestock to the best advantage — can we, for example, sell our livestock when it is properly finished and the market offers promise of highest returns?	☐	☐
5. Can we readily adjust our farming program to meet emergency situations and shift from operations that are losing propositions?	☐	☐
6. If we are renting, do we have a clear understanding with our landlord on the equitable sharing of the cost of fertilizers, and other items that will increase earnings for both owner and operator?	☐	☐
7. Do we use a cropping system that will conserve the soil and increase earnings?	☐	☐
8. Do we apply fertilizers and limestone on the basis of soil tests and yield checks?	☐	☐
9. Will we have money left for needed farm and home improvements after meeting living expenses and loan payments?	☐	☐

Farm Records

1. Do we keep a good set of records?	☐	☐
2. Do our records show how much money we made or lost on each separate part of our farming operations?	☐	☐
3. Are our records in such form that we may readily show net earnings from farming operations the past several years?	☐	☐
4. Will our records provide information needed to prepare a financial statement (assets, liabilities, and net worth)?	☐	☐

The Loan

1. Will the money we propose to borrow increase our net income?	☐	☐
2. Do we avoid borrowing on short-term notes when longer terms would be better geared to expected income?	☐	☐
3. Do we plan for our credit needs over the entire year?	☐	☐

FARM MANAGEMENT II

UNIT 6: DETERMINING INCOME AND SOCIAL SECURITY TAXES

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to figure his income and social secruity taxes.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Define investment credit, social security taxes, and income taxes.
B. Determine investment credit.
C. Define income averaging.
D. Explain when taxes can be deferred.
E. Determine taxable income for his farm.
F. Determine income and social security taxes for his farm.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Hand out a sample investment credit problem for students to work.
2. Have an accountant speak to the group about preparing tax returns.

B. Student:

1. Compute income and social security taxes for your farm.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Doane's Agricultural Reports, "Taxes and Social Security Section".

Income Tax Management for Farmers, Cooperative Extension Service, Kansas State University, Manhattan.

Farmer's Tax Guide, Internal Revenue Service.

FARM MANAGEMENT II

UNIT 7: ANALYSIS OF NET WORTH STATEMENT

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to analyze a net worth statement to determine the financial situation of his farm.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Define a net worth statement.

B. Explain what use can be made of a net worth statement.

C. Understand the best time of year to make a net worth statement.

D. List the steps used in making the net worth statement.

E. Work through a sample net worth statement and calculate various ratios to determine soundness of the farm business.

F. Analyze his net worth statement for his own farm to determine soundness of the farm business.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Have the student complete the net worth statement for his farm.

B. Student:

1. Complete a net worth statement for your farm.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Net Worth Statement

The simplest way to describe a net worth statement is to say it is a listing of all the things owned by the farmer placed in one column and a listing of all the things owed by the farmer in another column. The difference between the totals of these two columns is called the net worth. Sometimes the net worth is a negative figure; in other words, the farm business has more debts than assets. A net worth statement can be taken from more than one point of view; for example, the farm separate from the home; the individual separate from the farm; and the farm, the home and the person separately.

B. Uses That Can Be Made of the Net Worth Statement

The comparison of the net worth of one year with that of another

is an effective way to tell the amount the farmer's net worth has grown or lost in a given period of time. This is an important factor to consider when judging the ability of management, as well as the effect of outside influences on the growth of the business. Beyond this most important bit of information, other facts about the relative security of the financial structure of the business can be learned. These are to be described and illustrated later in this discussion.

C. Best Time of Year to Make a Net Worth Statement

Because much of the information needed for the net worth statement is brought together at the time of making the annual inventory, it has been found that the net worth statement should be prepared at the beginning of the farmer's record year. Most records are kept on the calendar year basis. At this time inventories are taken and are, therefore, up-to-date. The closing of the farmer's records requires that mortgages and notes be accounted for and, in the same way, the money owed the farm business has come under review; so, it is best to place all this data on the net worth statement forms while they are fresh in the farmer's mind. However, the net worth statement can be made at any time of the year.

D. Steps Used in Making the Net Worth Statement

1. The net worth statement is a comparison of what is owned against what is owed. A prepared net worth statement form is helpful since it suggests what assets and what liabilities the farm business may have. Also, a prepared form provides some order for gathering together this information on assets and liabilities and grouping them for revision of soundness of the business.

2. Provision is made for the grouping of both assets and liabilities on the basis of purpose and time factors. In the case of assets, there are three kinds, namely, fixed, working and current. Likewise, there are three kinds of liabilities: namely, long-time, deferred and current. One should keep in mind that the "lines" between these classifications are not sharp and definite. One person might feel that a particular item belongs in the current asset category while another person might see reasons for the item being placed in the working assets group. The groupings have meanings and permit comparisons with the net worth statement which helps reveal the relative soundness of the business. Soundness in this respect means the ability of the business to meet adversities brought about by sudden changes in market prices or sudden demands for payment of debts owed by the farm business. Experience has taught many farmers that the sudden death of a person to whom money has been owed has caused serious stresses on the farm business. A death makes a debt payable at once and most always at a time when the farm business in not able to pay. The ability of the farm business to meet sudden and unexpected demands for payment is a measure of the soundness of the business. Ratios have been developed to express this position of relative soundness.

V. INSTRUCTIONAL MATERIAL

A. Net Worth Statement (sample)

B. Net Worth Statement (form)

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

NET WORTH STATEMENT

Date _____

ASSETS (What We Own)	Value	LIABILITIES (What We Owe)	Value
FIXED ASSETS		**LONG-TERM LIABILITIES**	
Land	$300,000	Mortgage on Farm Real Estate	$279,000
Buildings, Fence, etc.	40,000	Mortgages on Other Real Estate	- - - -
Dwelling	20,000	Total Long-Term Liabilities	$279,000
Other Real Estate	- - - -		
Other Property Owned	- - - -		
Total Fixed Assets	$360,000		
WORKING ASSETS		**DEFERRED LIABILITIES**	
Purchased Breeding Livestock	$- - - -	Mortgages & Notes on Livestock	- - - -
Raised Breeding Livestock	- - - -	Commodity Credit Loans	- - - -
Market Livestock	- - - -	Mortgages & Notes on Farm Machinery	$ 49,000
Machinery, Equipment, Farm Share of Auto	$130,000	Mortgages & Notes on Auto Insurance Loans	- - - -
Automobile (Personal Share)	- - - -	Total Deferred Liabilities	$ 49,000
Total Working Assets	$130,000		
CURRENT ASSETS		**CURRENT LIABILITIES**	
Grain, Hay, Supplies, Feed	$ 54,000	Farm Accounts Payable For:	
Industrial Insurance	- - - -	Custom Work by Others	- - - -
Farm Accounts Receivable for:		Purchased Feed	- - - -
Custom Work, Labor Done for Others	- - - -	Fertilizer, Seed, Lime, Fuel	- - - -
Livestock, Breeding Animal	- - - -	Repairs, Supplies, Vet	- - - -
Grain, Supplies, Hay Sold to Others	- - - -	Breeding Animals Bought	- - - -
Cash on Hand in Bank	4,000	Other Unpaid Farm Bills	- - - -
Stocks and Bonds	- - - -	Unsecured Notes (owed)	$ 8,000
Cash Value of Insurance	6,000	Unpaid Personal Debts:	
Non-Farm Accounts Receivable	- - - -	Doctor, Hospital, Furniture	- - - -
Total Current Assets	64,000	Total Current Liabilities	$ 8,000
TOTAL ASSETS	$554,000	**TOTAL LIABILITIES**	$336,000

Net Worth = Total Assets - Total Liabilities

$218,000 = $554,000 - $336,000

NET WORTH STATEMENT AS OF _____

Property Owned

	Number	Value		Value
FIXED ASSETS			**LONG-TERM LIABILITIES**	
Land		$	Mortgage on Farm Real Estate	$
Farm bldgs., structures fences		$	Mortgage on other Real Estate	$
Dwelling		$		$
Other Real Estate		$	Total Long-Term Liabilities	
Total Fixed Assets			$	
$				
WORKING ASSETS			**DEFERRED LIABILITIES**	
Power machinery		$	Leins on machinery and equipment	$
Auto		$		$
Farm shop tools		$		$
Dairy cows		$		$
Dairy calves		$	Liens on livestock	$
Feeder cattle		$		$
Brood ewes		$		$
Feeder lambs		$		$
Brood sows		$	Liens on crops	$
Hogs raised		$		$
Poultry		$		$
Other		$		$
Total Working Assets			Chattel Mortgages (other)	$
$				$
				$
CURRENT ASSETS				$
Crops held for sale		$	Total Deferred Liabilities	
Growing crops		$	$	
Feed		$	**CURRENT LIABILITIES**	
Seed		$	Store bills	$
Supplies, materials, fertilizer		$	Accounts payable (taxes, etc.)	$
Cash on hand		$	Supply bills	$
Bonds		$	Gas and oil bills	$
Stocks and investments		$	Feed bills	$
Life ins., (cash surrender value)		$	Short-term debts	$
Accounts owed us-collectable		$		$
Furniture & equipment		$		$
Total Current Assets				$
$				$
			Total Current Liabilities	
			$	
TOTAL ASSETS		$	TOTAL LIABILITIES	$

Net Worth (Total Assets Minus Total Liabilities) _____

FARM MANAGEMENT II

UNIT 8: GENERAL INTERPRETATION OF FIRST YEAR FARM BUSINESS ANALYSIS

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to explain the steps in making a farm business analysis and some measures of performance.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Work out the steps involved in a farm business analysis summary.

B. Define farm business analysis.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Ask the class members to give the meaning of some of the terms on their own farm business analysis.
2. Give each class member a copy of a completed Farm Business Summary Form and a copy of Steps in Making a Farm Business Analysis.
3. Use the figures in the sample summary form and work out the first 19 steps and have the class participate in the calculations.
4. Have the class members have some comparisons of the terms used in the analysis of their business with another business, such as the automobile business.

B. Student:

1. Calculate some of the analysis steps by referring to sample problem.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

See sample problem included in Instructional Materials part of this unit.

V. INSTRUCTIONAL MATERIAL

A. Steps In Making a Farm Business Analysis (sample problem).

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Unit, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

Summarizing the Year's Business, Vocational Agriculture Service, University of Illinois at Urbana-Champaign.

Farm Records - A Management Tool, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

A. Calculate some of the analysis steps by referring to sample problem

Steps in Making a Farm Business Analysis:

Step 1. Add all Cash Receipts = $33,921

Step 2. Add all Cash Expenses = $36,556

Step 3. Sum Capital Gains/Losses = $1,522

Step 4. Determining Net Inventory Change (Beginning Inventory). Items to be included are: Raised Breeding Livestock, Market Livestock, Grain, Hay, Supplement, Supplies and Fertilizer.

	Beginning	Closing
Purchased Breeding Livestock	$ 1,210	$ 2,107
Raised Breeding Livestock	5,220	7,000
Market Livestock	2,440	12,283
Grain, Hay, Supplement	5,120	11,370
Supplies and Fertilizer	128	357
TOTAL	$14,118	$33,117

Step 5. Sum Change in Total Inventory $33,117 - $14,118 = $18,999 Increase

Step 6. Sum Depreciation – Items to be included are Buildings and Fence. Machinery and Equipment, and Purchased Breeding Livestock.

Buildings, Fence, etc.	$ 989
Machinery, Equipment	2,670
Purchased Breeding Stock	- - - - -
TOTAL	$3,659

Step 7. Figure Total Capital Investment – (Beginning Inventory and Closing Inventory ÷ 2) Items to be included are Step 4 items plus Purchased Breeding Livestock, Machinery and Equipment, Buildings and Fences, and Current Agricultural Value of Land.

	Beginning	Closing
Items from Step 4	$14,118	$33,117
Machinery and Equipment	15,316	17,034
Buildings and Fences	20,165	19,176
Current Agricultural Value of Land	37,500	37,500
TOTAL	$87,099	$106,827

$$\frac{\$87,900 + \$106,827}{2} = \frac{\$96,963}{\text{Total Capital Investment}}$$

Step 8. Figure interest on Capital Investment (Step 7 x 6%) minus interest paid which is item 15 of Cash Expenses. The answer is interest on owned capital.

$96,963 x .06 = $5,817

$5,817 - $4,450 = $1,367 81 80

Step 9. Figure Gross Income (Total Cash Receipts ± change in Raised Breeding Livestock, Market Livestock, Grain, Hay, Supplement, Supplies and Fertilizer inventory ± capital gains/losses for Raised Breeding Livestock, Purchased

$33,921 + $18,102 + $1,522 = $53,545

Step 10. Figure Gross Income per $1,000 invested (Step 9 ÷ Step 7 x $1,000)

$53,545 ÷ $96,963 x $1,000 = $552 Gross Income per $1,000 Invested

Step 11. Figure Total Overhead Expenses (Sum of Expense Items of total depreciation, building repairs, interest, taxes, cash rent, insurance + Step 8.) Note: This answer includes a charge for interest on owned capital.

Depreciation	$3,659	($989 + $2,670)
Interest	$4,450	
Building, Fence & Tile Repairs	2,855	
Taxes	268	
Insurance	332	
Cash Rent	660	

$12,224 + $1,367 (Step 8) = $13,591

Step 12-a. Figure Overhead Expense as percent of Gross Income (Step 11 ÷ Step 9)

$13,591 ÷ $53,545 = 25.3%

Step 12-b. Figure Variable Expenses (Sum of expense items of hired labor, feed purchased, farm supplies, machinery repairs, fuel, oil and grease, utilities, drying and storage, miscellaneous, seeds and plants, fertilizer and lime, machine hire and trucking, automobile expenses, veterinary and medicine, breeding fees and registration,

$27,991

Step 12-c. Figure Variable Expenses as a percent of Gross Income (Step 12-b ÷ Step 9)

$27,991 ÷ $53,545 = 52.2%

Step 13. Figure Net Cash Income (Step 1 - Step 2) This refers to operating items only.

$33,921 - $36,556 = -$2,635 Net Cash Income

Step 14. Figure Net Farm Income (Gross Income - total cash expenses - depreciation + feeder livestock purchases). Note: Breeding Livestock sales are included in the Gross Income computation in Step 9 and thus affect the Farm Profit computation in Step 14.

$53,545 - $36,556 - $3,659 = $13,330 Net Farm Income (Profit)

Step 15. Figure total Family Labor and Management Income (Step 14 - Step 8)

$13,330 - $1,367 = $11,963 Family Labor and Management Income

Step 16. Figure Family Labor and Management Income as a percent of Gross Income. (Step 15 ÷ Step 9)

$11,963 ÷ $53,545 = 22.3% Family Labor and Management Income as a % of Gross Income

Step 17. Figuring Family Labor Charge

a. Compute hours of labor for all members of the family by adding:

1) Total hours of operator's labor used during the entire year.

2) Plus .8 times the total hours used by the wife during the entire year.

3) Plus .8 times the total hours used by the son over 14 during the entire year.

4) Plus .5 times the total hours used by the son under 14 during the entire year.

b. Figuring the value of labor

1) The value per hour of the operator's labor represents what he could earn for performing similar work in the community. This does not necessarily mean working as a hired farm worker, but off-farm jobs as well. Do not include in this labor charge a value for management.

2) Each family member should be assigned a value per hour for his labor.

Case Swine Farm Labor – 1601 hours times $3.00 per hour
= $4,803

Step 18. Figuring Management Income (Step 15 - Step 17)

$11,963	-	$4,803	=	$7,160
Family Labor and Management Income Income		Value of Family and Operator Labor		Management Income

Step 19. Figuring Management Income as a percent of Gross Income (Step 18 ÷ Step 9)

$7,160	÷	$53,545	=	13.3%
Management Income		Gross Farm Income		Management Income as a Percent of Gross Farm Income

B. Have class members calculate other measures of performance relative to their specific enterprises and interests.

C. Point out where mistakes in records lead to incorrect analysis.

1. Failure to record some receipts
2. Failure to record some expenses
3. Wrong depreciation
4. Incorrect inventory
5. Mistakes in transfer of some items.

FARM BUSINESS ANALYSIS

DEPARTMENT OF AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY
COOPERATIVE EXTENSION SERVICE

OHIO STATE UNIVERSITY

705 — NAME and/or NUMBER | ADDRESS | Ohio — COUNTY | PHONE NUMBER | YEAR 19 73

THIS RECORD IS FOR

OWNERSHIP: (Check one) ☑ FULL OWNER ☐ PART-OWNER, PART-TENANT ☐ TENANT ONLY ☐ ABSENTEE OWNER ☐ TENANT AND LANDLORD

TYPE OF BUSINESS: (Check one) ☑ SOLE PROPRIETOR ☐ PARTNERSHIP ☐ CORPORATION ☐ OTHER (List)

CASH RECEIPTS (To Nearest Dollar) — Col. 1

	KIND	COL. NO. pp. 92 & 93	AMOUNT
A	Milk and Cream (Net)	12	$
B	Poultry and Eggs	13	
C	General Crops	2-4	6,636
D	Special Crops	2-4	
E	Cash Rent & Royalties	9	
F	Labor Off Farm	7	
G	Custom Work	6	
H	Wool & Wool Subsidies	14	
I	Other Livestock Prod.	14	
J	Tax Refund	8	
K	Patronage Dividend	8	19
L	Breed. Fees Received	9	
M	Misc. Receipts	9	
N	Gov. Crop Payments	5	
O	Gov. Payments	5	
P	MARKET LIVESTOCK* — Swine	15	27,266
Q	MARKET LIVESTOCK* — Fat Cattle & Calves	16	
R	BOTH RAISED AND PURCHASED — Veal Calves	18	
S	BOTH RAISED AND PURCHASED — Lambs	17	

CASH EXPENSES (To Nearest Dollar) — Col. 2

KIND	COL. NO. pp. 94 & 95	AMOUNT
Hired Labor	2	$1,696
Feed Purchased	10	11,996
Farm Supplies	5 & 13	1,740
Machinery Repairs	8	702
Bldg., Fence, etc., Repairs	19	2,855
Fuel, Oil, Grease (Farm Share)	6	1,935
Utilities (Farm Share)	17	620
Drying and Storage	7	1,179
Misc. Expenses	23	96
Seeds and Plants	3	1,203
Fertilizer and Lime	4	3,672
Mach. Hire and Trucking	9	1,596
Auto Expense (Farm Share)	18	685
Interest on Notes and Mortgage (Farm Share)	22	4,450
Veterinary and Medicine	14	229
Breeding Fees, Regs., and Milk Testing	15	646
Feeder Livestock Purchase**	16	—
Taxes (Farm Share)	20	268
Rent (Cash)	20	660
Insurance (Farm Share)	20	332

* Enter only Market Livestock. Breeding Livestock is entered under Capital Gains.
** NOTE: For Feeder Livestock Purchases, include only purchases made during this record year.
*** Enter Appraised rather than depreciated value for Purchased Breeding Livestock.
**** What would similar land sell for this year? If some of this price is because of speculative or urban influences, list only Agricultural Value.

INVESTMENT & INVENTORY (To Nearest Dollar) — Col. 3

KIND	Beginning	Closing	Average (optional)
Purch. Breed. Livestock***	$ 1,210	$ 2,107	
Raised Breed. Livestock	5,220	7,000	
Market Livestock	2,440	12,283	
Grain, Hay, Supplement	5,120	11,370	
Supplies and Fertilizer	128	357	
Machinery, Equipment	15,316	17,034	
Buildings, Fence, tile, etc.	20,165	19,176	
Land (Current Ag. Val.)****	37,500	37,500	

CAPITAL GAINS (Part Sale - Undepreciated Value)	Gain	Loss	Total
Raised Breed. Livestock	$ 1,540		
Purch. Breed. Livestock	-	18	
Machinery, Equipment	—	—	

DEPRECIATION	DEPRECIATION FOR YEAR
Bldg., Fence, tile, etc.	$ 989
Machinery, Equipment	2,670
Purch. Breed. Livestock	—

LABOR

Operator's Labor USED	Hours	Value Per Hour
Number of Operators — 1	1601.	3.00
Number of Operators	0	
Unpaid Family Labor USED Wife	0	
Family Labor Over 14	0	
Family Labor Under 14	0	
Hired Labor	1074	

For Office Use Only

Year | County | Farm

Type of Farm: 0 | Ownership | Type of Business | Years of Corporation

Form 7365—Rev. 10/76

CHECK LIST

Please go over your entries with this check list to make sure you have filled out the form properly.

General—All figures should be to the nearest whole number unless a decimal point is provided. All entries must be legible.

Page 1—Family and operator labor should be entered in hours for the year, not daily, monthly, etc. Do not adjust Unpaid Family Labor USED to man-equivalent hours. Enter only MARKET livestock sales in the cash receipts column. Breeding livestock sales are entered under Capital Gains.

Page 2—Check enterprise codes to be sure they are correct. Enter prices for each crop. For each crop, Column 6 plus Column 7 should equal Column 8 plus Column 9 plus Column 10, and Column 10 should equal the sum of Columns 11 through 16. Purchased feed should include only feed actually fed. If there is an entry in Column 3, each crop on your farm must have an entry in Column 3, and each type of livestock on your farm must have an entry under the labor section on page 4. Labor entries are to the nearest one-tenth of an hour.

Page 3—Check enterprise codes in the top row to be sure they are correct. Each enterprise on page 3 must have an entry on page 2 or 4.

Page 4—% must have an entry for each enterprise. Enter butterfat test to nearest hundredth of a percent and average number of cows to the nearest tenth of a unit. Enter weight figures where called for. An enterprise cannot be evaluated without weight figures. Any section used must be completely filled out. If you have no entry on a line, enter a zero.

Year County Farm
□□-□□-□□□

CROP PRODUCTION

CROPS FED TO LIVESTOCK

2.

		1* CODE	2 VALUE/ UNIT	3** LABOR/ ACRE (HRS.)	4 TOTAL ACRES	5 TOTAL PROD.	6 SHARE OF PROD.	7 BEGINNING INVENTORY	8 SALES	9 CLOSING INVENTORY	10 FED ON FARM	11 (31) DAIRY	12 (33) HOGS	13 (52) FEEDER CATTLE	14 (54) BEEF COWS	15 (56) (57) SHEEP	16 (58) POULTRY	
A	Corn	01	2.50	8.38	93	9300 Bu	9300 Bu	4000 Bu	2511 Bu	4500 Bu	6289 Bu	Bu	6289 Bu	Bu	Bu	Bu	Bu	A
B	Soybeans	02				Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	B
C	Oats	03	1.50	3.35	25	750 Bu	750 Bu	— Bu	— Bu	350 Bu	400 Bu	Bu	400 Bu	Bu	Bu	Bu	Bu	C
D	Wheat	04				Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	D
E	Other Grain	0				Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	E
F	Other Grain	0				Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	Bu	F
G	Alfalfa Hay	10				T	T	T	T	T	T	T	T	T	T	T	T	G
H	Clover, Mixed Hay	11				T	T	T	T	T	T	T	T	T	T	T	T	H
I	Other Hay	1				T	T	T	T	T	T	T	T	T	T	T	T	I
J	Other General Crop	46			0	T	T	T	T	T	T	T	T	T	T	T	T	J
K	Haylage	19				T	T	T	T	T	T	T	T	T	T	T	T	K
L	Corn Silage	21				T	T	T	T	T	T	T	T	T	T	T	T	L
M	Other General Crop				0	T	T	T	T	T	T	T	T	T	T	T	T	M
N	Rotation Pasture	40					Rotation Pasture USED Value Per Acre $				Ac	Ac	Ac	Ac	Ac	Ac	Ac	N
O	Perm. Pasture	42		1.67	25		Permanent Pasture USED Value Per Acre $ 3.00				25 Ac	Ac	25 Ac	Ac	Ac	Ac	Ac	O
P	Special Crop					$	$											P
Q	Special Crop					$	$	Actual Pounds of Purchased Supplement FED				80,000 Lbs	Lbs	80,000 Lbs	Lbs	Lbs	Lbs	Lbs	Q
R	Special Crop					$	$	Actual Dollars of Purchased Supplement FED (include grinding plus mix plus minerals)				$ 11,996	$	$ 11,996	$	$	$	$	R
S	Other Special Crop	45				$	$											
T	Diverted Acres	44		—	—		Actual Pounds of Purchased Grain FED					— Lbs	Lbs	— Lbs	Lbs	Lbs	Lbs	Lbs	T
U	Woodland				25		Actual Dollars of Purchased Grain FED					$ —	$	$ —	$	$	$	$	U
V	Other Land				28														V
W	Total Acreage				196		Actual Pounds of All Purchased Roughages FED					— Lbs	Lbs	— Lbs	Lbs	Lbs	Lbs	Lbs	W
X	Crop Acres Owned				47		Actual Dollars of All Purchased Roughages FED					$ —	$	$ —	$	$	$	$	X
Y	Crop Acres Rented				71		These are amounts actually fed and not amount purchased.												

*See attached directions to determine the appropriate code to use. Always complete the code column if a value is entered on Lines E, F, I, M, P, Q, R

** This column is completed only if reasonably accurate estimates are available of actual labor requirements. If no values are entered, standard labor requirements will be used. If this column is completed, the labor section on page 4 must also be completed.

*** Columns 6 plus 7 must equal Columns 8 plus 9 plus 10, and Columns 11 through 16 must equal Column 10.

FARM MANAGEMENT II

UNIT 9: ANALYSIS OF SIZE OF BUSINESS

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to analyze the size of his farm business.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Describe three ways that the volume of business can be increased.

B. List four measures of size of business.

C. Explain ways of increasing volume.

D. Explain ways of increasing labor efficiency.

III. POSSIBLE LEARING ACTIVITIES

A. Instructor:

1. Review with farmers their volume of business in the light of gross income, total capital investment, total crop acres and total production man-work units. Discuss the significance in and the reasons for the variation from suggested standards. Have members establish their own level of performance.

   Example:

   Required Gross Income - If a farmer needs $12,000 for family living, debt repayment, depreciation and expansion and his net margin is 30 percent, he must have a volume sufficient to yield $40,000 gross income.

$$\frac{\$12,000}{.30} = \$40,000$$

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Size and Volume of Business Measures

1. Total crop acres farmed is a good physical measure of the size of business while gross farm income is a good financial measure of the volume of business.

2. Total capital invested provides still another measure of size of business. This measure is computed by totaling inventory values. It should include all capital employed in the farm busiress regardless of the owner's equity.

3. Total productive man work units (PMWU) indicate the amount of labor used in the course of the year for producing crops and livestock. This measure shows the labor input for a given farm. A PMWU is the amount of work accomplished in a ten-hour day by an average worker employing typical production practices and equipment. It is computed by multiplying PMWU per unit (acre or head) by the number of each kind of animal or the number of crop acres.

B. Measures of Business Size

1. Total Crop Acres - Includes only tillable acres.
2. Gross Farm Income- Equals cash receipts plus or minus change in raised breeding livestock, market livestock, grain, hay, supplement, supplies and fertilizer inventories; plus or minus capital gain or losses for raised breeding livestock, machinery and equipment; minus feeder livestock purchased.
3. Total Capital Invested
   a. Shows all capital employed in the farm business regardless of the owner's equity.
   b. This is computed by totaling beginning and closing values and dividing by two.
4. Production Man-Work Units
   a. This is the amount of labor used in the course of the year for producing crops and livestock. A PMWU in a ten-hour day by the average worker or (by one man with an average amount of labor-saving equipment).
   b. This is computed by multiplying PMWU per unit (acre or head) by the number of each kind of animal or the number of crop acres.

C. Increasing Volume of Business

1. Increase size of operation.
2. Buy or rent more land.
3. Increase livestock operation.
4. Increase production.

D. Increase Labor Efficiency

1. Work more hours
2. Organize your jobs
3. Increase size and amount of machinery if the size of operation and production will justify.

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Farm Records - A Management Tool, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbia.

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriuclum Materials Service, Ohio State University, Columbus.

FARM MANAGEMENT II

UNIT 10: ANALYSIS OF FINANCIAL RESULTS

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to analyze the financial results of a farm business.

II. SPECIFIC OBJECTIVE

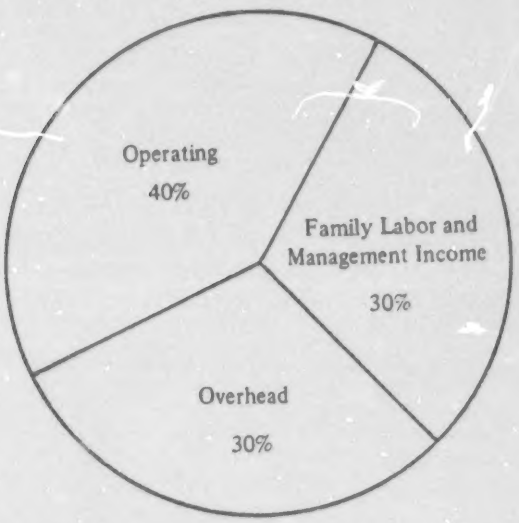
After instruction, the student should be able to:

A. Analyze the financial results of a farm business.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Return farmer's reports of their farm business analyses and review attained measures of financial returns.
2. Discuss each financial measure and the optimum level of performance that a farm manager should achieve in order to have a sound and successful financial business.
3. Use the following circle graph to illustrate the ideal relationship between the operating cost, net margin and overhead expenses in analyzing the financial results of the farm business.



B. Student:

1. If time permits and the class is of sufficient size, determine the class average for each measure; also determine the "high" and the "low" levels of performance.
2. Complete worksheet on "ratios".

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Analysis of Financial Results - Income

1. Net farm income

a. It is the money available for family living, debt repayment and new farm investments.

b. This is computed by taking receipts minus expenses, adjusted for change in inventory, capital gains or losses and depreciation.

2. Family labor and management income

a. This represents the returns for unpaid family labor, operator's labor and management efforts.

b. This is computed by the following steps:

1. Multiply the average captial investment by 7.5% or by the current rate of interest exisitng in the community.
2. Subtract interest paid on capital from step 1.
3. Subtract step 2 from the net farm income.

3. Family labor and management income as a percent of gross

a. This represents the percentage of gross income remaining for labor and management. (How efficiently has the farmer produced farm commodities?)

b. This is determined by dividing family labor management income by the gross income.

4. Management income

a. This indicates the amount of net farm profit remaining to pay to operator for his managerial services in managing and supervising the farm operation.

b. This is computed by subtracting the value of the oeprator's and unpaid family labor from "Family Labor and Management Income."

B. Relationship Between Investment and Income

1. Rate of return to capital

a. This indicates the percent of interest earned on owned equity of capital.

b. This is determined by the following steps:

1. Subtract farm liabilities from farm assets.
2. Subtract the value of operator's income, the value of unpaid family labor and the management fee from the net farm income (profit).
3. Divide the net return to capital by the owned equity.

2. Gross ratio

a. This is the percentage of gross income absorbed by combined operating and fixed expenses.

b. The toal expenses are divided by gross income.

3. Operating ratio

a. This ratio indicates the efficiency of operation in terms of cost per unit of production.

b. The total operating expenses are divided by gross income.

4. Gross income per $1,000 invested or rate of capital turnover.

a. This indicates how efficiently capital resources are being utilized.

b. The gross income is divided by the total farm assets, the dividend is then multiplied by 1,000.

5. Overhead ratio

a. This represents the percentage of gross income absorbed by overhead expenses.

b. This is computed by dividing overhead expenses by gross income.

C. Income Measures

1. Net farm income (1973 Accomplishments)

a. Dairy* $56,986

b. Crops** $55,006

NOTE: A definite standard for net farm income cannot be established since this will vary with each family and its goals; however, a farm family should receive a minimum subsistence.

2. Gross farm income - A minimum gross income of $40,000 is needed in

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*High 25% of owner, operator and tenant landlord dairy farms

**High 50% owner-operator crop farms

order for a farm family to receive a fair return for family living, debt repayment and saving. This figure represents the minimum for volume of business if a sound financial operation is to exist. Gross income varies with the volume and efficiency of a a farm business. Thus, a farm with low financial volume, even if it was operated efficiently, could not return enough annual returns to capital, land, labor and management if the gross income was low.

3. Labor and management income of 1973 overall summaries

   a. Dairy high 25% = $45,679

   b. Hogs average = $33,825

   c. Crops high 50% = $48,367

   d. Beef average = $26,670

   Overall average = $38,635

4. Family labor and management income as a percent of gross (1973 accomplishments)

   a. Dairy 35.6% - high 25% of operators

   b. Crops (owner operator) 47.9% - high 50% of operators

   c. Family labor and management income is an indication of how much of the total gross income is left for labor and management. A high percent indicates how successfully a farmer has kept his expenses down and how efficiently the manager has produced farm commodities (cost of production control). Standard for Family Labor and management income: 30%.

5. Managerial return - Standard to strive for is 10% of gross income. How much income, after a charge for your labor and family labor has been taken, can you afford to give to your management decisions? Anyone who makes dicisions should be paid for these decisions or else they could forfeit this decision-making for a common laborer's job.

D. Estimating Farm Net Worth from a Farm Business Summary

1. Comparing a farmer's growth in Farm Net Worth is valuable in determining if a farmer is becoming better established financially.

2. A method of estimating Farm Net Worth is to determine first what percent the owned equity interest is of the total interest charge on investment and then multiply the result times the capital investment.

   Example:

   a. Farmer paid $1,033 interest during the year

   b. Total capital investment $92,645

   c. Interest charge on investment - $92,645 x 6% = $5,559

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*The interest rate of 6% was used in calculating all interest charges on the 1973 print-outs. Beginning in 1974, the interest rate will be 7.5%.

d. Interest on owned equity = difference in total interest charge and interest paid = $4,526 ($5,559 - $1,033)

e. Percent owned equity interest is of total interest = 81% of capital investment of $92,645 = $75,042 approximate net worth.

E. Measures of performance for relationship between investment and income for a typical full owner operation

1. Rate of return to capital - Minimum to strive for is 10%. If a farmer utilized his other opportunities, he could invest the money tied up in his farm assets elsewhere and receive interest returns on his capital. Thus, this measure determines just how well the farmer is investing his capital.

2. Operating ratio - The standard to strive for is 40%. If operating costs exceed 40% of the gross income, the business is not operating efficiently. Operating expenses are those expenses that are directly involved with production such as feed, fertilizer, fuel, etc., As total production increases, the operating expenses also increase. An efficient manager should have as low operating costs as possible per unit of production.

3. Rate of capital turnover - (Gross income/$1,000 invested) Depending upon enterprise, 50% is the standard to strive for. This is a common measure of efficiency in business. It shows how efficiently the manager is using the capital resources in the production process. A farm business should have a good return in comparison to the amount of capital invested. Otherwise, the money invested in these resources could be invested in some other enetrprise which would yield more efficient returns. This measure is the same as "gross income per $1,000 invested."

4. Overhead Ratio - A ratio of 30% indicates an efficient operation. Certain fixed or overhead costs must be paid regardless of the amount of production. As total production increases, overhead costs decrease per unit of production. However, if production stops, these costs still continue and must be paid by the farm business.

F. Use the examples and work sheet included with this unit for class discussion.

Examples:

1. Rate of return to capital - strive for 10%

$$\frac{\$1,367 \text{ Net return to capital}}{\$33,354 \text{ Owned Farm Equity (Farm Assets - Farm Liabilities)}} = 4.1\% \text{ rate of return to capital}$$

2. Gross ratio - strive for 70%

$$\frac{\$46,385 \text{ Total expenses (operating + overhead)}}{\$53,545 \text{ gross income}} = 86.6\% \text{ gross ratio}$$

3. Operating ratio - strive for 40%

$\frac{\$27,991 \text{ Total operating expense}}{\$53,545 \text{ Gross income}}$ X 100 = 52.2% operating ratio

4. Rate of capital turnover - (Gross income/$1,000 invested) strive for 50%

$\frac{\$53,545 \text{ Gross income}}{\$96,961 \text{ Total capital assets (farm)}}$ = 55.2% of capital

Turnover x 1,000 = $500 amount of gross income derived from each $1,000 invested.

5. Overhead ratio - strive for 30%

$\frac{\$13,591 \text{ Total overhead expenses}}{\$53,545 \text{ Gross income}}$ X 100 = 25.3% Overhead ratio

V. INSTRUCTIONAL MATERIAL

A. Relationship Between Investment and Income (worksheet of ratios).

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

FARM MANAGEMENT II

UNIT 11: ANALYSIS OF THE CROPPING PROGRAM

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to review his cropping program and determine the profitability of it in comparison with other farms.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Determine costs of his cropping program compared to others that are comparable.

B. Determine the gross income/net income ratio for his program.

C. Figure which phases of the cropping program were the most profitable.

D. Decide which cropping program would be the most profitable for the next year.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Distribute each individual farmer's farm business analysis sheet.
2. Discuss the measures of crop performance in the light of suggested standards.
3. Present the suggested standards of measures of performance and have members establish their own level of performance.

B. Student:

1. Have the farmers each figure the percent of the potential yield of of his crops for his soil type.
2. The farmer will also need to compare his yields and efficiency to past years and establish a basis of reference for his own farm.

V. OUTLINE OF INSTRUCTIONAL CONTENT

A. Analysis of Cropping System

1. Crop performance

a. Crop acreage per enterprise.

b. Crop yield per acre per enterprise.

c. Crop yield index.

1. This expresses the relative level of yields for all crops on the farm in combination and is a ratio between yields produced on a particular farm and the yields achieved on other similar farms.
2. The crop yield index is illustrated below.

Crop	1 Acres	2 Yield on This Farm	3 Yield on Other Farms	4 Percentage This Farm's Yield Is of Other Farms' Yields (Col. 2 ÷ Col. 3)	5 Adjusted Value (Col. 1 x Col. 4)
Corn	40	80	100	80	3,200
Soybeans	50	40	30	133	6,650
Alfalfa	40	3	4	75	3,000
TOTAL	130				12,850

Crop yield index (12,850 ÷ 130) = 98.

d. Gross value of crops per crop acre.

1. This shows the combined results of selection of crops, influences affecting yields and prevailing prices.
2. The gross value of crops produced is divided by the number of crop acres.

B. Crop production efficiency

1. Crop yield

Each farmer should compare his crop yeilds with those in the Ohio Farm Business Analysis Report and to county averages for his local county. Local averages can be obtained from the county ASC office.

2. Crop yield index.

Crop	1 Acres	2 Yield on This Farm	3 Yield on Other Farms	4 Percentage This Farm's Yield Is of Other Farms' Yields (Col. 2 ÷ Col. 3)	5 Adjusted Value (Col. 1 x Col. 4)
Corn					
Soybeans					

Crop	1 Acres	2 Yield on This Farm	3 Yield on Other Farms	4 Percentage This Farm's Yield Is of Other Farms' Yields (Col. 2 ÷ Col. 3)	5 Adjusted Value (Col. 1 x Col. 4)
Wheat					
Oats					
Alfalfa					
Clover, mixed hay					
Tomatoes					
Sugar beets					
Pickles					
TOTAL					

This index expresses the relative yield of all the crops grown on the farm to local standards. This can also be used to compare the overall crop production the current year with past years. The farmer should compute his own index using his yield and the local county averages.

VI. REFERENCES

"Kansas Farm Management Summary and Analysis Reports" Cooperative Extension Service, Kansas State University, Manhattan.

Setting Up Farm Records to Provide for Analysis, Vocational Agriculture Service, University of Illinois.

"Comparing Production Costs for Economic Decision Making" Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

Planning the Cropping System, Vocational Agriculture Service, University of Illinois.

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agriculture Education Curriculum Materials Service.

FARM MANAGEMENT II

UNIT 12: ANALYSIS OF THE LIVESTOCK PROGRAM

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to review his livestock program and determine the profitability of it in comparison with other farms.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Determine the costs of his livestock program.

B. Determine the gross income to net income ratio for his farm.

C. Figure which phases, if any, of his livestock program were the most profitable.

D. Decide which, if any, livestock program would be the most profitable for the coming year.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Pass out individual farm business analyses and a livestock performance list.

2. Discuss the various measures of livestock performance in the light of suggested standards.

B. Student:

1. Pass out livestock performance list and have members place their overall livestock efficiency index in the "your farm" column and discuss the differences found.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Analysis of Livestock Program

1. Overall efficiency

a. Net value of livestock increase - This represents the total income from livestock sales, increases in inventory value and value of livestock products used in the home. From this value, livestock purchases and any decreases in inventories are subtracted

b. Return per $100 feed fed - This is determined by dividing the

net value of livestock increase by the value of all feed fed and then multiplying the dividend by 100.

2. Individual livestock enterprises

   a. Daily rate of gain per head - This is calculated by dividing the total pounds of livestock produced by the number of head then divide by the number of days on feed.

   b. Pounds of feed required to produce 1 lb. gain - Divide the total pounds of feed fed by the total pounds of gain produced.

   c. Returns over feed cost - Subtract the feed cost from the total returns.

   d. Feed cost per 100 lbs. gain - Divide the total value of feed fed by the total pounds of gain produced and take this amount times 100.

   e. Returns per $100 feed fed for individual enterprises - This is determined by dividing the net increase of the individual livestock enterprise by the value of all feed fed for the enterprise and then multiplying the dividend times 100.

V. INSTRUCTIONAL MATERIAL

A. Suggested Measures of Performance (performance list).

VI. REFERENCES

Farm Management Summary and Analysis Report, Cooperative Extension Service, Department of Economics, Kansas State University, Manhattan.

Setting up Farm Records to Provide for Analysis, Vocational Agriculture Service, University of Illinois.

"Comparing Production Costs for Economic Decision Making", Department of Economics Cooperative Extension Service, Kansas State University, Manhattan.

Planning Livestock for the Farm, Vocational Agriculture Service, University of Illinois.

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

Suggested Measures of performance – Based on 1973 *Farm Business Analysis Summary Reports**

		1973 Summary	Your Farm
I.	**Feeder Cattle**		
a.	Net value of livestock increase	$50,334	_____
b.	Returns per $1 feed fed	$1.37	_____
c.	Beef produced per man	65,675 lbs.	_____
d.	Cost of beef production per cwt.	$52.09	_____
e.	Beef cattle sold per man	146 head	_____
II.	**Beef Breeding**		
a.	Number of cows bred	62.3	_____
b.	Number of calves born	60.0	_____
c.	Number of calves weaned	58.2	_____
d.	Percent calf crop	93.4	_____
e.	Pounds beef produced per cow bred	470 lbs.	_____
f.	Feed cost per cwt. gain	$23.59	_____
g.	Returns per $1 feed fed	$3.33	_____
III.	**Dairy**		
a.	Returns per $1 feed fed	$1.97	_____
b.	Net value of livestock increase	$52,432	_____
c.	Number of cows milked per man	50 head	_____
d.	Total pounds of milk produced per cow	14,000 lbs.	_____
e.	Total pounds milk sold per man	700,000 lbs.	_____
f.	Value of dairy products sold per cow	$850	_____
g.	Cost per cwt. milk produced	$6.02	_____
h.	Veterinary cost per cow	$1 per $1,000 Gross Income	_____
		$1.50 per $1,000 over 14,000 lbs. milk produced	_____
IV.	**Swine**		
a.	Net value of livestock increase	$74,807	_____
b.	Returns per $1 feed fed	$1.78	_____
c.	Number of sows and gilts per man	50 head	_____
d.	Number of pigs per litter	7.2 head	_____
e.	Pounds of pork sold per sow	2,341 lbs.	_____
f.	Pounds of pork sold per man	117,074 lbs.	_____
g.	Pounds of pork sold per farm	159,220 lbs.	_____
h.	Total cost per cwt. of pork produced	$32.39	_____
i.	Total feed cost per cwt.	$21.79	_____

*These reports are available through the Cooperative Extension Service, The Ohio State University.

FARM MANAGEMENT II

UNIT 13: ANALYZING LABOR, MACHINERY, AND EQUIPMENT FOR COST AND EFFICIENCY

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to determine the efficiency of his operation in relation to labor, machinery, and equipment.

II. SPECIFIC OBJECTIVE

After instruction, the student should be able to:

A. Make an analysis of the individual farm labor, machinery, and equipment efficiency.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Have available individual farm business analysis sheets.
2. Present chart of measures of performance.
3. Follow-up with comparisons of standards vs. individual performances.
4. Have members to establish their own bench marks.

B. Student:

1. Complete work sheets included in this unit.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Analysis of Labor Performance and Machinery Efficiency

1. Labor performance

a. Crop acres per man - This is calculated by dividing the total crop acres by the man equivalents. (Man equivalent is equal to the total man months divided by 12.)

b. Gross income per man - The gross income is divided by man equivalents

c. Productive man-work units per acre - Divide the total PMWU by the number of acres.

2. Machinery economy

a. Power and equipment cost per acre - This is the total annual cost of power and equipment (fuel, repairs, depreciation, interest on investment, taxes and insurance divided by the number of crop acres.

b. Power and equipment investment per crop acre - Divide the total machinery investment by the number of crop acres.

c. Machinery cost per PMWU - Divide the total machine cost by the total PMWU.

B. Labor Measures of Performance

Measures of Performance		Standards	Your Farm
Crop acres per man			_____
Livestock units per man			_____
Total PMWU per man		300	_____
Miscellaneous and maintenance labor		25% of total	_____
Gross income per man	* Dairy	$40,000	_____
	Swine	40,000	_____
	Beef	55,000	_____
	Crop	40,000	_____

*Estimated standards

C. Discussion questions

1. Does this analysis tell you all you need to know about your labor efficiency?
2. If not, what else is needed?
3. If your labor efficiency is low, what implications does it have?
4. Are there any changes that you can identify that might improve the farm business?
5. What additional labor input data would be required by you to figure the cost per unit of production for various enterprises?

D. Power and Machinery Measures of Performance

Measures of Performance		1973 Summary	Your Farm
Power and machinery investment per crop acre	Dairy	Upper 25% = $106.97	_____
	Swine	Average = $89.09	_____
	Beef	Average = $88.24	_____
	Crop	Upper 50% = $60.11	_____
Power and machinery cost per crop acre	Dairy	Upper 25% = $48.19	_____
	Swine	Average = $45.19	_____
	Beef	Average = $40.92	_____
	Crop	Upper 50% = $26.45	_____
Machine cost per MPWU			_____

E. Discussion Questions

1. How does your performance compare with the standard?
2. What is your overhead ratio?
3. What is your overhead cost on power and machinery? (Machinery investment times overhead ratio.)
4. What are the implications of power and machinery costs on farm profit?
5. If costs are high, what can you do to bring them in line? Are more acres or is more volume the answer?
6. What can a farmer afford to invest in additional power and machinery?
7. How does volume of your business affect the overhead expense?

F. Use the Work Sheets included in this unit to calculate some of the measures of performance.

1. Production man-work units
2. Man equivalents of labor
3. Crop acres per man
4. Power and machinery cost per acre
5. Machinery overhead ratio
6. Power and equipment investment per acre

V. INSTRUCTIONAL MATERIAL

A. Farm Machinery - Economic Decisions
B. Productive Man-Work Units (work sheet)
C. Man Equivalents of Labor (work sheet)
D. Power and Equipment Costs Per Acre (work sheet)
E. Power and Equipment Investment Per Acre (work sheet)

VI. REFERENCES

Farm Management Summary and Analysis Report, Cooperative Extension Service, Department of Economics, Kansas State University, Manhattan.

"Leasing vs. Purchase of Farm Machinery," Cooperative Extension Service, Department of Economics, Kansas State University, Manhattan.

"Managing Hired Labor," Cooperative Extension Service, Department of Economics, Kansas State University, Manhattan.

Labor Requirements of Western Kansas Crops, Agricultural Experiment Station, Kansas State University, Manhattan.

Labor Requirements of Central Kansas Crops, Agricultural Experiment Station, Kansas State University, Manhattan.

Labor Requirements of Eastern Kansas Crops, Agricultural Experiment Station, Kansas State University, Manhattan.

Instruction Guide for Farm Machinery Economic Decisions, Transparencies, Vocational Agriculture Service, University of Illinois.

"A Look at Machinery Cost," MF-273, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

Work Sheet No. 1

PRODUCTIVE MAN-WORK UNITS

A productive man-work unit is the amount of work accomplished in a 10-hour day by an *average* worker employing typical production practices and equipment.

Enterprise	Number of Units on This Farm		PMWU Per Unit		Total PMWU
CROPS	**Acres**				
Corn – grain	_____	x	.5	=	_____
Corn – silage	_____	x	.8	=	_____
Wheat with straw baled (wheat .4, & baled straw .4)	_____	x	.8	=	_____
Oats – grain	_____	x	.2	=	_____
Soybeans – grain	_____	x	.4	=	_____
Hay – 1st cut	_____	x	.4	=	_____
– 2nd cut	_____	x	.3	=	_____
– 3rd cut	_____	x	.2	=	_____
Grass silage	_____	x	.5	=	_____
Orchard – commercial	_____	x	5.0	=	_____
Potatoes	_____	x	.5	=	_____
Sugar beets (farm labor only)	_____	x	2.2	=	_____
Tomatoes	_____	x	22.0	=	_____
Tobacco	_____	x	30.0	=	_____
LIVESTOCK	**Head or Units Of Gain**				
Dairy cow	_____	x	6.0	=	_____
Dairy replacements	_____	x	1.5	=	_____
Beef cow – calf to weaning	_____	x	1.2	=	_____
Bull	_____	x	2.0	=	_____
Beef replacement heifers	_____	x	1.0	=	_____
Beef feeder – per 1,000 lbs. gain	_____	x	1.0	=	_____
Litter - farrow to weaning	_____	x	.7	=	_____
Market hog – weaning to market – per 1,000 lbs. of gain per 1,000 lbs. of gain	_____	x	.72	=	_____
Boar	_____	x	3.0	=	_____
Ewe and lamb to weaning	_____	x	.6	=	_____
Fat lamb – per 100 lbs. gain	_____	x	.4	=	_____
Hens – 1,500 + birds (per bird)	_____	x	.015	=	_____
	Days				
WORKED OFF FARM	_____	x	1.0	=	_____
			TOTAL PMWU		_____

FARM MANAGEMENT II

UNIT 14: EVALUATION OF THE FARM BUSINESS

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to determine if his farm is being operated efficiently.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Compare his gross income to net income ratio to that of similar farms.

B. Explain the meaning of this comparison.

C. Compare other ratios of his farm to those of comparable farms.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

B. Student:

1. List methods of Increasing the efficiency of the farm business.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

FARM MANAGEMENT II

UNIT 15: INSURANCE, TYPES AND MANAGEMENT

I. TERMINAL OBJECITVES

At the end of this unit, the students will be able to plan insurance needs for themselves and their farm business.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Explain the principles on which an insurance contract works.

B. List the four groups insurance needs for most farm families fall into.

C. List and briefly explain four types of life insurance policies.

D. List four factors that affect a young farmer's life insurance needs.

E. List two things provided by life insurance.

F. Explain how to compare costs between policies and companies.

G. List the types of health insurance available, and indicate which types are needed.

H. Determine what property insurance should be carried on the farm business.

I. Explain deductable clauses.

J. Indicate what liability insurance is designed to cover.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Show filmstrip "Insurance in the Farm Business" Vocational Agriculture Service, University of Illinois.

B. Student:

1. Review insurance policies and determine if they meet needs.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Principles on which Insurance Contracts Work

1. Losses of few are shared by many.

2. Regular premiums are paid into a fund which is invested and claims paid from this fund.

3. We should insure only against "jolting" financial losses.

B. Four Groups that Insurance Needs for Most Farm Families Fall Into

1. Life insurance - protect investments in farm and provide for future living needs of the family.
2. Health insurance
3. Property insurance - protection for buildings, contents, machinery, livestock.
4. Liability - for injury to employees and outsiders.

C. Four Types of Life Insurance Policies

1. Term protection only.
2. Ordinary Life - pays premiums for life (can take paid up at 65 as an example for less than face value). Provides protection and savings.
3. Limited pay life - pay premiums for specified period (as to age 65). Premiums are enough to continue protection for life.
4. Endowment - primarily savings, pays a specific amount at a certain time.

D. Factors that Affect a Young Farmer's Life Insurance Needs

1. Shortage of cash - most young farmers are investing in their business and need to keep premium costs low.
2. Higher return from farm investments.
3. Social security is providing some protection.
4. A good life insurance program (including social security) will:
   a. protect his family if he dies.
   b. provide retirement income if he lives.
   c. build emergency funds, immune from creditors.
   d. provide collaterial for loans.

E. Two Things Provided by Life Insurance

1. Protection (Farmers primarily need protection)
2. Savings

F. Comparing Costs Between Policies and Companies

Compare opportunity cost of premiums with guaranteed cash values. Difference is cost of protection.

G. Kinds of Health Insurance Available

1. Hospital
2. Surgical
3. General Medical

4. Major Medical
5. Loss of Income

(NOTE: Remind students of "jolting loss" principle. Often a high deductible which wouldn't be a jolting loss.)

6. Needs of farmers

   a. Most farmers need major medical

   b. Most young farmers also need hospital and surgical to avoid jolting losses.

   c. Most farmers wouldn't need loss of income because their farm income would continue with help of family and/or neighbors for the short run at least.

H. Property Insurance that should be Carried

1. Buildings - fire and wind at 80% of value.
2. Contents - grain, hay, furniture, etc. - fire and wind at 80% of value.
3. Machinery - fire at least 80% of value.
4. Livestock - fire (lightning) at 80% of value.

I. Deductible Clause

Provides that the farmer will pay the first $50, $100, etc. The larger the deductible amount, the lower the premium.

J. Liability Insurance is Designed to Cover:

1. Injury to employees and outsiders.
2. Should carry limits about equal to net worth or $100,000 whichever is more, but based on liability exposure and amount of worry and individual can stand.
3. Rates are based on "exposure" or risk assumed by the company - more acres, etc. higher rates.

V. INSTRUCTIONAL MATERIAL

A. "Insurance in Farm Business" (filmstrip)

VI. REFERENCES

Vo. Ag. Service, University of Illinos

Cooperative Extension Service, Kansas State University, Manhattan.

Doane's Agriculture Reports.

FARM MANAGEMENT II

UNIT 16: INCOME TAX MANAGEMENT

I. TERMINAL OBJECTIVE

At the end of this unit, the student should be able to manage the farm business to increase after-tax income

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. List methods of reducing income taxes paid.

B. List tax management strategy.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

B. Student:

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Material useful for this section is contained in Unit I-10 "Farm Tax Management."

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

FARM MANAGEMENT II

UNIT 17: COMPLETING THE K-MAR 105 FARM BUSINESS SUMMARY

I. TERMINAL OBJECTIVES

At the end of this unit, the student should be able to complete the K-Mar 105 farm business analysis summary for his farm.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Use the codes used in the K-Mar 105 program.

B. List the types of forms used.

C. List the uses of the summary.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide students with a sample of the K-Mar computer analysis summary.

B. Student:

1. Complete the analysis summary.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

"K-Mar 105 Electronic Management System" Department of Economics, Agriculture Experiment Station, Kansas State University, Manhattan.

FARM MANAGEMENT III

UNIT 1: GENERAL INTERPRETATION OF SECOND YEAR FARM BUSINESS ANALYSIS

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to identify strengths and weaknesses in the farm business.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Identify farm business strengths and weaknesses in his farm business.

B. Identify ways of correcting these weaknesses.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Develop some case situations for class to examine and compare.
2. Use recommended standards from county.

B. Student:

1. Determine strengths and weaknesses of case farm.
2. Use similar procedure in identifying own business strenths and weaknesses.
3. Keep a comparison table of measures of performance for business.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

Information contained in Teaching Unit C-1 of the Ohio Farm Business Planning and Analysis Program and Teaching Units will be helpful in teaching this unit.

V. INSTRUCTIONAL MATERIAL

A. Total Cash Operating Expenses (transparency)

B. Analyzing Operating Costs (transparency)

C. Gross Income (transparency)

D. How Much Money It Takes (transparency)

E. FBA Comparison Table of Size of Business and Financial Results (comparison tables)

VI. REFERENCES

Kansas Farm Management Handbook, Department of Economics, Kansas State University, Manhattan.

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

Farm Management Summary and Analysis Report, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

TOTAL CASH OPERATING EXPENSES

TOTAL CASH EXPENSES ..... _____

minus

building repair ..... _____

interest ..... _____

taxes ..... _____

insurance ..... _____

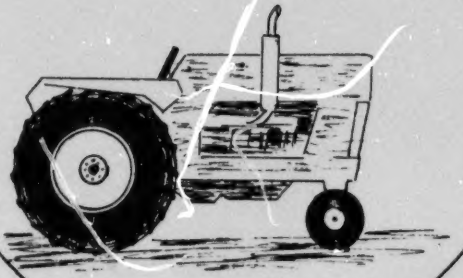
cash rent ..... _____

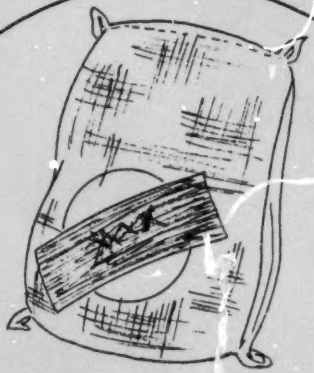
Total _____

TOTAL CASH OPERATING EXPENSES _____

ANALYZING OPERATING COSTS

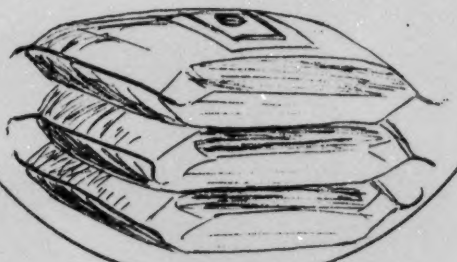
$ MACHINERY REPAIR COSTS PER ACRE





$ FEED USED PER UNIT OF PRODUCTION

$ FERTILIZER & LIME PER ACRE



MANAGER

$30,000
PER CHOP
MAN-YEAR
EQUIVALENT
GRO
INCO
SS
ME
man-year equiv.
gross income

HOW MUCH MONEY DOES IT TAKE?

Family Living	$5500
Debt Repayment	2000
Expansion	1500
	$9000

YOU NEED THIS

$30,000	Gross Income
.30	Family Labor & Management Inc.
$9000	

WHAT ARE YOUR GOALS?

- College Education
- Vacation in Florida
- Remodel the Home
- A New Tractor
- Expand the Business

FARM BUSINESS ANALYSIS

Name _____ County _____

Comparison Table of Size of Business and Financial Results

Measures of Performance	Suggested Standard For Your Type Of Farm	19__	19__	19__
Income Measures:				
Net farm income				
Family labor and management income				
As a % of gross income				
Managerial returns				
Size and Volume of Business:				
Total crop acres				
Gross farm income				
Total capital invested				
Total PMWU per man				
Relationship Between Investment and Income:				
Rate of return to capital				
Operating ratio				
Rate of capital turnover				
Overhead ratio				

Comparison Table of Labor and Machinery Performance

Measures of Performance	Suggested Standard For Your Type Of Farm	19__	19__	19__
Crop Performance:				
Value per harvested crop acre				
Labor Performance:				
Crop acres per man				
Gross income per man				
Total productive man work units per man				
Machinery Economy:				
Power and equipment investment per acre				
Power and equipment cost/A.				
Machine cost per PMWU				

Comparison Table of Livestock Performance

Measures of Performance	Suggested Standards	19__	19__	19__
Over-All Livestock Performance:				
Net value of livestock increase				
Returns per $1.00 feed fed				
Feeder Cattle:				
Number fed out per man				
Rate gain per head per day				
Pounds concentrate per 100# gain				
Feed cost per 100# gain				
Returns per $1.00 feed fed				
Beef (Breeding):				
Number cows bred				
Number calves born				
Number calves weaned				
Percent calf crop				
Pounds beef produced per cow				
Feed cost per 100# gain				
Returns per $1.00 feed fed				
Sheep:				
Percent lamb crop				
Pounds lamb produced per ewe				
Pounds wool produced per ewe				
Feed cost per 100# gain				
Returns per $1.00 feed fed				
Swine:				
Number litters farrowed per man				
Pigs farrowed per litter				
Pigs weaned per litter				
Total pounds pork sold per man				
Average weight sold				
Pounds feed per 100# gain				
Feed cost per 100# gain				
Returns per $1.00 feed fed				
Dairy:				
Number cows milked per man				
Total pounds milk produced per cow				
Total pounds milk sold per man				
Value of dairy products sold per cow				
Cost per 100# milk produced				
Returns per $1.00 feed fed				

FARM BUSINESS INTERPRETATION

Name or Number _____ County _____ Year _____

I. Strengths in Farm Business:

1. 6.
2. 7.
3. 8.
4. 9.
5. 10.

II. Weaknesses in Farm Business:

1. 6.
2. 7.
3. 8.
4. 9.
5. 10.

III. Farm Business Goals to Be Accomplished Next Year:

1. 6.
2. 7.
3. 8.
4. 9.
5. 10.

IV. Things That Need to Be Done to Alleviate Weaknesses Next Year:

1. 6.
2. 7.
3. 8.
4. 9.
5. 10.

V. Farm Business Goals to Be Accomplished Within Next 10 Years:

1.
2.
3.
4.
5.

VI. Things That Need to Be Done to Alleviate Weaknesses Over the Next 10 Years:

1.
2.
3.
4.
5.

FARM MANAGEMENT III

UNIT 2: DETERMINING FARM AND FAMILY GOALS

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to involve his family and formulate farm and family goals.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Identify possible goals for farm families.

B. Determine priorities for your farm.

C. Explain procedures to achieve these goals.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Develop a list of goals for a case farm.
2. Develop a flannel board presentation on "Steps to Farm Family Satisfaction."

B. Student:

1. Assist in formulating goals for the case farm.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Goals are standards we need to reach to help us attain our objectives. Some characteristics of goals are:

1. Goals need to be specific.
2. Goals represent an improvement over the present level.
3. Goals should be measurable.
4. Goals should be attainable.
5. Goals should be constructive.

B. The following points should be considered in establishing goals which will provide proper motivation for good management of the farm and home.

1. All family members should contribute.
2. Recognize that there are both individual and family goals.
3. Recognize short-term, intermediate and long-term goals.

4. Select goals in terms of available resources and strengths and weaknesses in farm business.
5. Competition between goals is normal and desirable.
6. Goals must be modified as resources, ideals, etc., change.

C. Farm and family characteristics to consider when developing goals:

1. Size of family
2. Age of operator
3. Size and type of farm business
4. Position on agricultural ladder: manager, partnership, part-time, ownership, etc.
5. Family aspirations, desires, values
6. Social values
7. Family cultural values
8. Financial structure of farm business

D. The fulfillment of family goals is dependent primarily on the profitability of the farm business. A profitable farm business is the key to supplying the wants and satisfactions for the entire family. This realization should lead to wanting to determine whether the business can be more profitable. The identification of business strengths and weaknesses is a step toward the attainment of this objective.

E. Types of goals - Business vs. Family

1. Short-term goals - Goals that you want to achieve within the next two or three years.
2. Intermediate goals - Goals you would like to achieve in 5 to 15 years.
3. Long-term goals - Goals that you would like to achieve in your lifetime.

F. Identification of areas from which goals may be selected:

Farm:	Family:
Size of business	Pride of farm and home
Financial results	Health and nutrition
Crop efficiency	Education
Livestock efficiency	Social and recreation
Labor, power and machinery efficiency	Church

G. Formulating Farm and Family Goals

Have each family identify its own farm and family goals. This is

necessary if goals are to be realistic. This may be done after goals have been formulated for the case farm or concurrently with the development of the goals for the case situation. In order to involve the whole family, enrollees may want to formulate their goals at home. You may want to use the enclosed forms in this unit.

V. INSTRUCTIONAL MATERIAL

A. Steps to Farm Family Satisfaction (flannel borad presentation)

B. Resource - Income - Satisfaction (flannel board presentation)

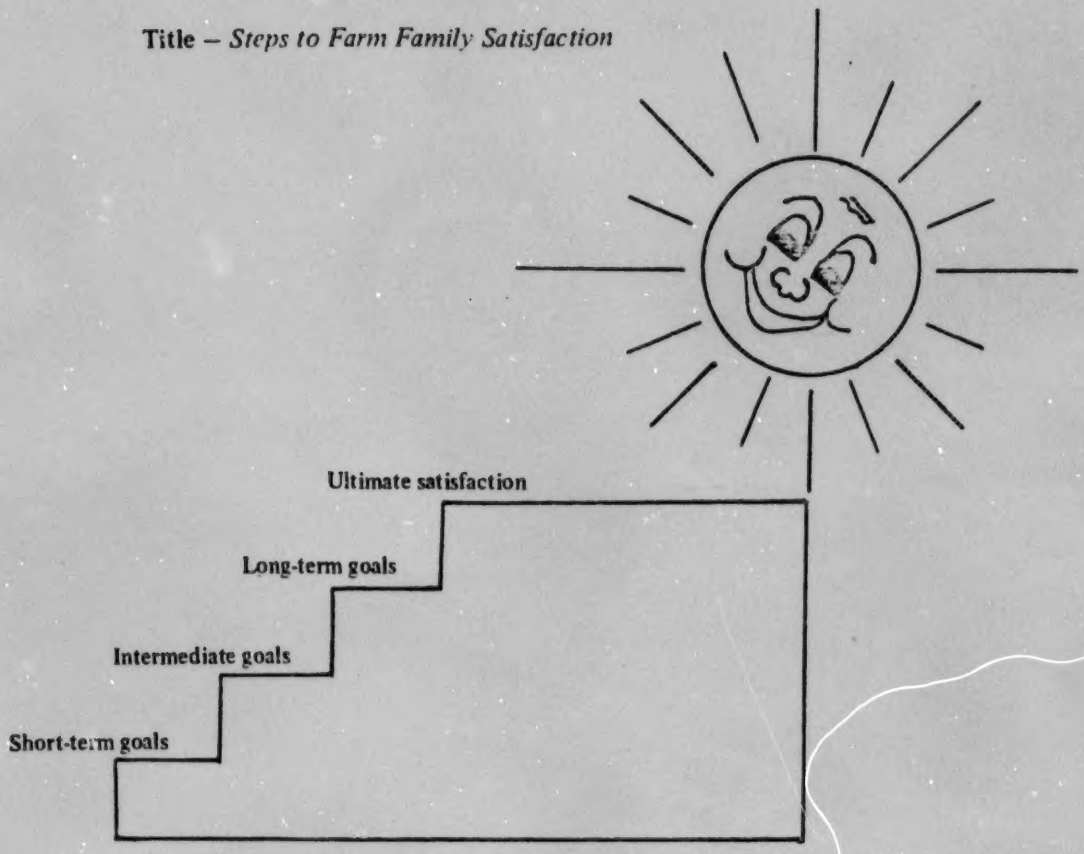
C. Points to recognize in setting up goals (transparency)

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

Farm Business Arrangements: Which One For You? Cooperative Extension Service, Kansas State University, Manhattan.

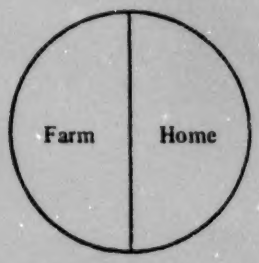
Title – *Steps to Farm Family Satisfaction*



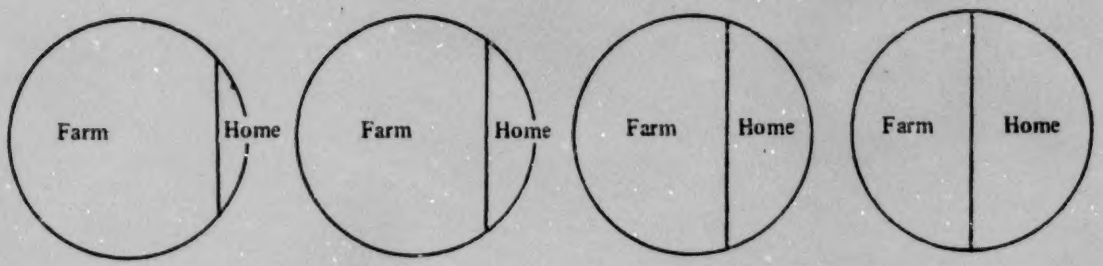
- Place pictures and other items on flannel board to illustrate all types of goals:

  Example: Income – dollar bill
  Recreation – man landing fish
  Pride – well-kept farmstead
  Retirement – man in rocker
  Education – boy in cap and gown
  Etc.

Title – *Resource – Income – Satisfaction*



Ideal Use of Net Farm Income



- We must involve the family as a whole in determining the farm-family goals. Ideally the net farm income should be used to maximize enjoyable family living and home life. However, due to the stress of farm debt and the building of farm business, this may not be possible immediately. Nevertheless, the farm-family goals should aim toward an equitable use of available funds as soon as possible.

POINTS TO RECOGNIZE IN SETTING UP GOALS

1. All family members should contribute.
2. Recognize that there are both individual and family goals.
3. Recognize both long and short term goals.
4. Select goals in terms of available resources.
5. Competition between goals is normal and desirable.
6. Goals must be modified as resources change.
7. Constantly modify goals as resources change or as the family is able to use resources more efficiently.

FARM MANAGEMENT II

UNIT 3: ANALYZING THE SECOND YEAR OF RECORDS

I. TERMINAL OBJECTIVES

At the end of this unit the student should be able to analyze the second year's records to determine strengths and weaknesses.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. List methods of increasing income on his farm.

B. Determine most profitable enterprise from the previous year's records.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

B. Student:

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

FARM MANAGEMENT III

UNIT 4: LOWERING OPERATING COSTS

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to identify ways of lowering operating costs per unit of production through the use of farm business records and analysis.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Describe the amount of total farm operating cost that should be absorbed by overhead expenses.

B. Describe the amount of total farm operating costs that should be absorbed by operating costs.

C. Determine the per cent of total gross income that should be left for labor and management.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. By using the following questions, help farmers determine what per-cent of their farming operation income should be used to pay over-head expenses, operating expenses and labor and management. (List decisions on board for reference.)

   a. What percent of the total cost of the farming operation should be absorbed by overhead expenses?

   b. What percent of the total cost of the farming operations should be absorbed by operating costs?

   c. What percent of the total gross income should be left for labor and management? Net margin?

2. Work out the percent of the total costs of the farming operation absorbed by operating costs for the case farm.

   Steps to Work Out the Operating Ratio:

   1. List the operating costs items.
   2. List the dollars spent under each cost item.
   3. Divide the total operating expenses by the gross income.

B. Student:

1. Work out the percent of total costs of the farm operation absorbed by operating costs for own farm.

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

FARM MANAGEMENT III

UNIT 5: REDUCING OVERHEAD COSTS

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to identify ways of reducing overhead costs through the use of farm business records and analysis.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Determine what percent of their farming operation's income should be used to pay:

1. Overhead expenses
2. Operating expenses
3. Labor and management

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. By using the following questions, help farmers determine what percent of their farming operations income should be used to pay overhead expenses, operating expenses, and labor and management. (List decisions on board for reference.)

   a. What percent of the total cost of the farming operation should be absorbed by overhead expenses?

   b. What percent of the total cost of the farming operation should be absorbed by operating costs?

   c. What percent of the total gross income should be left for labor and management? Net margin?

2. Work out the percent of the total costs of the farming operation that is absorbed by overhead costs for the case farm.

   Steps to Work Out the Overhead Ratio:

   a. List the overhead cost items.

   b. List the dollars spent under each cost item.

   c. Divide the total overhead expenses by the gross income.

B. Student:

1. Work out the percent of total costs of farming operation that is absorbed by overhead costs for own farm.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Overhead Costs

1. Review the strengths and weaknesses identified in Unit 1 for the case farm(s) that are related to the overhead costs.

2. Review items included in overhead costs for the case farm and discuss which ones are too high.

3. Comparison of suggested ratios of capital invested in buildings and livestock equipment for different enterprises.

Enterprise	Buildings	Equipment
Dairy	2	1
Swine	1	1
Poultry	3	1
Beef Breeding	5	1
Beef Feeding	3	1

NOTE: If overhead costs are out of line, it could be due to the balance between capital invested in buildings and livestock equipment.

4. Annual fixed overhead costs per $1,000 invested in:

Kind	New Facilities	Used Facilities
Farm Buildings 20-yr. life	11%	12.4%
Livestock Equipment 10-yr. life	17%	31.5%
Field Equipment 10-yr life	19%	35.0%

B. Ways to Reduce Overhead Ratio

1. Depreciation

a. Spread depreciation over a longer period of time.

1. Farmer bought a $12,000 tractor and set salvage value at $2,000. This leaves $10,000 to be depreciated.

Life	Total Depreciation	Depreciation Per Year
5 years	$10,000	$2,000
8 years	10,000	1,250
10 years	10,000	1,000

b. Use tractor more hours to reduce depreciation per tractor hour. Assume the above tractor will depreciate $1,000 per year, how much will it depreciate per hour when used 200, 400, or 800 hours? (Divide $1,000 by hours used.)

c. Spread depreciation over a longer period of time.

1. Barn value at $10,000

Life 25 years Annual depreciation = $400

Life 30 years Annual depreciation = $333

Life 40 years Annual depreciation = $250

2. Cash rent

Cash rent per acre will remain constant regardless of production. Therefore, it is necessary to increase production to reduce the cost of cash rent per unit of production.

3. Interest

Interest per acre will remain constant regardless of production. Therefore, it is necessary to increase production to reduce the interest cost per unit of production.

4. Taxes

a. Taxes per acre will remain constant regardless of production. Therefore, it is necessary to increase production to reduce the taxes per unit of production

b. Land value at $650 is assessed at 35% of value equals $228 x 50 mills (tax rate) would be $7.00 per acre.

5. Building, fence, etc., repair

Building, fence, etc., repair will vary from year to year. However, to maintain them, repairs must be made. One should strive to keep repair costs per animal unit or animal production as low as possible.

6. Insurance

Insurance rates are increasing steadily. The cost to replace insured items makes it a necessity to increase the amount of insurance coverage. Therefore, it is next to impossible to reduce our insurance

expenses. However, we need to make a more efficient use of our buildings, livestock, power and equipment to reduce the cost of insurance per unit of production or use.

C. Estimating building and equipment costs information which may be helpful in assisting farmers in planning their operations to prevent high overhead ratios.

TABLE 1

ESTIMATED BUILDING AND EQUIPMENT COSTS BUDGETED ANNUAL FIXED OVERHEAD COSTS FOR NEW FACILITIES

First Year and Average Over Useful Life (In % of New Cost)

Fixed Costs	Buildings (20-year life)		Livestock Equipment (10-year life)		Field Equipment (10-year life)	
	1st yr.	Ave.	1st yr.	Ave.	1st yr.	Ave.
Depreciation	5.0	5.0	10.0	10.0	10.0	10.0
Interest (8.5%)	8.5	4.25	8.5	4.25	8.5	4.25
Repairs	0.5	1.5	1.5	2.5	2.0	3.5
Taxes	1.6	0.8	2.0	1.3	2.0	1.3
Insurance	.6	.3	.6	.3	.6	.3
Housing					.7	.7
TOTAL	15.9	11.85	22.6	18.35	23.8	20.05
Rule of Thumb –		12%		18%		20%

TABLE 2

ANNUAL FIXED OVERHEAD COSTS FOR NEW FACILITIES FOR VARIOUS YEARS OF USE - per $1,000 of new cost

Years of Useful Life	Buildings		Livestock Equipment		Field Equipment	
	1st yr.	Ave.	1st yr.	Ave.	1st yr.	Ave.
8	$212	$181	$226	$196	$235	$213
10	187	156	201	171	213	188
15	154	123	168	138	180	155
20	137	106	151	121	163	138

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

"Leasing vs. Purchase of Farm Machinery" Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

FARM MANAGEMENT III

UNIT 6: INCREASING LABOR AND MANAGEMENT INCOME

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to identify ways of increasing labor and management income through the use of farm business records and analysis.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Determine the amount of money needed toachieve farm and family goals.

B. Describe ways of increasing size and volume of the farm business.

C. List times when it is desirable to reduce size and volume.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Establish how much money it takes for each family to live the way the members want to live annually and improve their business.

   Example:

Family living	$7,000
Debt repayment	2,500
Expansion of business	2,500
	$12,000 Net labor and management income required.

2. Create interest in home accounts. Establish the need and value of keeping household and personal records, especially of expenditures. You may want to use the "1975 Summary of Farm Family Expenditures by Family Size" which is on page 4 or more up-to-date information if available.

B. Student:

1. Work sample problems:

   a. Estimate new investment in buildings and equipment to be supported by a budgeted swine program.

   b. Number of acres needed to farm to buy a $10,000 tractor without changing present level of income.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. When is it desirable to increase size and volume of a farm business? It is desirable to increase size and volume when present size of operation does not make it possible to efficiently utilize:

1. Available labor and power (surplus resources are very expensive)
2. Equipment (idle or little used equipment makes overnead costs burdensome)
3. Building (cost of owning or renting does not vary with use)
4. Crop and pasture land (cost doesn't vary with use)
5. Invested capital poorly distributed (too much of total capital in non-productive assets)

B. What are ways you can increase volume? Size and volume can be increased by:

1. Expansion
2. Intensification (increase volume on present unit)
3. Work away from home
4. Reduce waste
5. More efficient use of available resources

C. When is it desirable to reduce size and volume?

1. When the cost of maintaining volume reduced farm income.
2. When need of volume to meet fixed obligations and personal expenses decreases.
3. When age, etc., of operator reduces his physical capacity for work.
4. When family labor supply is sharply reduced.
5. When hired labor costs are extremely high relative to the value of products that hired labor is employed to produce.

D. How size and volume can be reduced

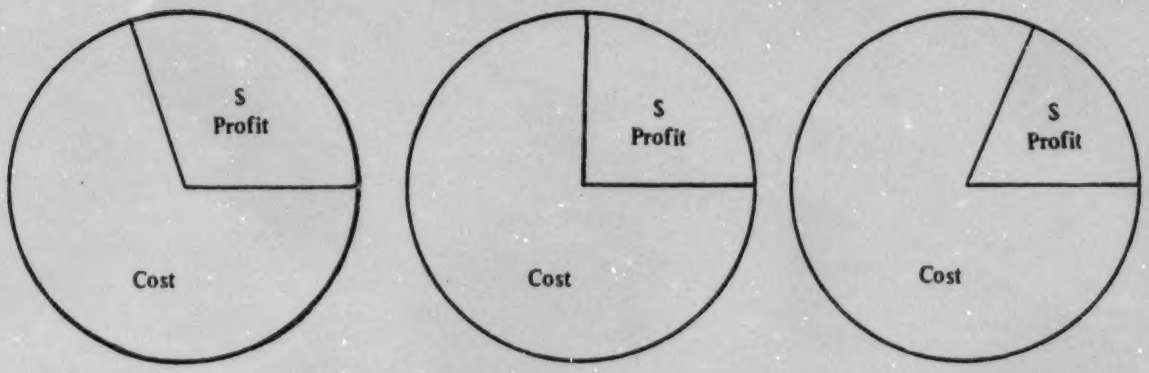
1. Shift to less intensive type of livestock and crop systems.
2. Take the less productive land out of rotation.
3. Cull the less productive livestock.

E. High levels of performance per acre, per animal and per man does not necessarily guarantee or assure high net earnings for the operators of farms which do not produce enough volume in relation to their non-variable (fixed overhead) expenses. Adequate size and volume as well as efficiency in the use of all factors of production are prerequisites to satisfactory net earnings.

F. Another way of increasing family labor and management income is to increase the volume of business by adding more production units.

1. Demonstrate and discuss the relationship between efficiency and volume

Illustration No. 1 - Volume and Efficiency = Profit



a. Efficiency alone does not guarantee an adequate income.

b. Total net farm income depends on volume and efficiency.

V. INSTRUCTIONAL MATERIAL

A. Summary of Farm Family Expenditures by Family Size (summary table)

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

Summary of Farm Family Expenditures by Family Size[1]
February 1975 Prices

	Family Size									
	2		3		4		5		6 or More	
	$	%	$	%	$	%	$	%	$	%
1. Housing	1477	30	1908	28	1874	24	2101	26	2144	25
2. Food	1213	25	1711	25	1974	26	2010	25	2485	29
3. Transportation	782	16	1034	15	1202	16	1348	17	980	11
4. Clothing	369	8	701	10	872	11	937	12	1095	13
5. Medical Care	547	11	686	10	645	8	705	9	836	10
6. Reading, Recreation, Education	165	3	345	5	473	6	437	5	532	6
7. Personal Care	128	3	194	3	205	3	217	3	225	3
8. Tobacco & Alcoholic Beverages	104	2	137	2	263	3	164	2	181	2
9. Other	116	2	107	2	249	3	116	1	120	1
Total Expenditures[2]	4901	100	6823	100	7757	100	8035	100	8598	100

1. All Farm Families, North Central Region, USDA Consumer Expenditure Survey.
2. These budget figures are for consumption items only. Total income allocation would need to include personal life insurance, social security or a pension plan, gifts and contributions to those outside the family and family savings. The data represents farm family spending patterns as they existed in 1961. Prices have been updated to 1975, but there is no adjustment for shift in spending patterns. The budget represents the exact same items that families bought in 1961. (Compiled by Geraldine I. Olson – Extension Specialist, Family and Consumer Economics, Cooperative Extension Service, The Ohio State University.)

SOURCES:

1. *Consumer Expenditures and Income.* USDA Consumer Expenditure Survey Report No. 2. Rural Farm Population, North Central Region. Washington, DC: Agricultural Research Service, US Department of Agriculture. 1961.
2. *Consumer Price Index for Urban Wage Earners and Clerical Workers.* Washington, DC: Bureau of Labor Statistics, US Department of Agriculture.
3. *1971 Handbook of Agricultural Charts.* Agricultural Handbook No. 423. Washington, DC: US Department of Agriculture.

FARM MANAGEMENT III

UNIT 7: DETERMINING THE MOST PROFITABLE CROPPING SYSTEM

I. TERMINAL OJBECTIVE

At the end of this unit the student should be able to identify ways of determining the most profitable cropping system.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Determine factors limiting his yield.

B. List methods of increasing profits in his cropping system.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Many times a farmer may be in a situation where the family labor and management income is not as high as desired. His present gross income may be $40,000 and his net margin on the operation is running at 25 percent. This combination gives him a $10,000 labor and management income. He would like to raise this figure to $13,000.

   a. What volume increase will be necessary?

   $\frac{\$13,000}{25}$ X 100 = $52,000 gross needed for $13,000 income

   b. Now the farmer must consider changes in his cropping system to increase his gross income to $52,000.

   c. Areas for the farmer to consider:

      1. More acreage of high return crops
      2. Introduce a new high return crop
      3. Add to the cropping system by renting additional acres
      4. Make timely planting of crops
      5. Feeding low-return crops through higher return livestock
      6. Sell non-marketable crop (pasture, etc.) produced on low-productive land by feeding it to livestock

2. Average crop yields in Kansas are considerably below what agronomists feel the minimum potential levels of production that may be obtained with the use of good crop production practices.

3. By using a series of questions, help farmers understand the need for knowing which crop enterprise is returning the most net farm profit for the units of production (land, labor, capital, management) being used.

   a. Which crop raised last year returned the most net profit?

   b. What crop last year returned the least net profit?

   c. Why not raise more of the high net return crop?

   d. Why raise the low return crop?

   e. Are there other crops that are not presently being raised that would fit into your farming program that have a higher return potential?

B. Student:

1. Consider present yields against the minimum potential for own area of the state and own farm.

2. After completion of this yield comparison, should a farmer find his crop yields averaging below the minimum average for his area, he should determine if any of the following factors are limiting his yields.

   a. Adequate amounts of fertilizer, lime and seed to produce desirable yields have been applied.

   b. High yeild varieties have been planted.

   c. Crop has been planted at the optimum time.

   d. Adequate drainage has been provided.

   e. Soil depleting erosion is being controlled.

   f. Weeds, insects and plant diseases are being controlled.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

This is a suggested procedure to use in comparing gross income and cost per acre.

NOTE: Farm Business Summaries will not furnish the information needed in completing this exercise. Farmers will need to have kept supplementary records of individual crops.

Reproduce the charts contained in the Instructional Materials section of this unit and discuss them with the farmers. Have the farmers use their figures where possible.

V. INSTRUCTIONAL MATERIAL

A. Soybeans, Receipts Per Acre (worksheet)

B. Wheat, Receipts Per Acre (worksheet)

C. Comparison of Cost of production for Major Crops (worksheet)

D. Unit Budget for Crops (worksheet)

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

"Kansas Farm Management Handbook" Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

Planning the Cropping System. VAS 2003b, Vocational Agriculture Service, University of Illinois, Urbana-Champaign.

WORK SHEET

Gross Income and Cost Per Acre for Different Crops at Various Yield Levels

SOYBEANS
Receipts Per Acre

Price/Bushel	Bushels Per Acre					
	25	30	35	40	45	My Farm
$4.00	$100.00	$120.00	$140.00	$160.00	$180.00	_____
4.50	112.50	135.00	157.50	180.00	202.50	_____
5.00	125.00	150.00	175.00	200.00	225.00	_____
5.50	137.50	165.00	192.50	220.00	247.50	_____
6.00	150.00	180.00	210.00	240.00	270.00	_____
6.50	162.50	195.00	227.50	260.00	292.50	_____
7.00	175.00	210.00	245.00	280.00	315.00	_____
7.50	187.50	225.00	262.50	300.00	337.50	_____
Cost/Acre*	$126.75	$139.53	$152.81	$165.05	$175.33	_____

WHEAT
Receipts Per Acre

Price/Bushel	Bushels Per Acre					
	30	40	50	60	65	My Farm
$2.50	$ 75.00	$100.00	$125.00	$150.00	$162.50	_____
3.00	90.00	120.00	150.00	180.00	195.00	_____
3.50	105.00	140.00	175.00	210.00	227.50	_____
4.00	120.00	160.00	200.00	240.00	260.00	_____
4.50	135.00	180.00	225.00	270.00	292.50	_____
5.00	150.00	200.00	250.00	300.00	325.00	_____
6.00	180.00	240.00	300.00	360.00	390.00	_____
Cost/Acre*	$110.55	$130.96	$153.45	$172.15	$194.95	_____

WORK SHEET

Comparison of Cost of Production for Major Crops

Crop						
Yield						
Price						
Gross Income						
Fixed Costs						
Land						
Taxes						
Other fixed costs						
Total Fixed Costs						
Variable Costs						
Labor						
Tractor						
Machinery						
Fertilizer						
Lime						
Manure						
Seed						
Weed and/or Pest Control						
Storage and/or Selling Costs						
Other variable costs						
Total Fixed and Variable Costs						
NET PROFIT PER ACRE						

WORK SHEET

UNIT BUDGET FOR CROPS

One Acre of _____

INCOME:			
Yield _____ x _____,[1] price/unit	$ _____		
Other income (pasture, straw, etc.)	$ _____		
Gross Income Per Acre			$ _____
COSTS:			
Fixed Costs:			
Interest on land investment ($300 x 7%)[2]	$ _____		
Taxes on land (or cash rent)[3]	$ _____		
Other fixed costs (crop insurance, etc.)	$ _____		
Total Fixed Costs		$ _____	
Variable Costs:			
Labor _____ hrs. x _____ charge/hr.[4]	$ _____		
Tractor costs _____ hrs. x _____ /hr.[4]	$ _____		
Machinery costs[4]	$ _____		
Lime*[4]	$ _____		
Fertilizer[4]	$ _____		
Manure _____ ton x _____ price/ton	$ _____		
Seed _____ lbs. x _____ price/lb.	$ _____		
Chemicals[4]	$ _____		
Other variable costs (selling)	$ _____		
Total Variable Costs		$ _____	
Total Fixed and Variable Costs			$ _____
NET PROFIT PER ACRE			$ _____

[1] The Ohio Agricultural Experiment Station, Mimeograph Bulletin AE 412.

[2] Interest of 7% on current value of land for farming purposes.

[3] 40% assessed value at 30 mills.

[4] *Ohio Farm Management Handbook*, Section II. *Crop Production Planning.*

*Prorate for one crop year.

FARM MANAGEMENT III

UNIT 8: DETERMINING THE MOST PROFITABLE LIVESTOCK PROGRAM

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to identify ways to maximize returns from livestock through increased efficiency and volume of production.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Determine if his livestock program is as profitable as it could be.

B. List ways of increasing profits from his livestock enterprise.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. The following questions may be used to help farmers determine if their livestock program is returning a satisfactory profit.

   a. What is the return per $1.00 feed fed?

   b. What is the cost of producing 100 pounds of animal products?

   c. What volume of business is needed to return a satisfactory profit?

   d. What is a satisfactory production level per man equivalent?

   Obtain class reaction to the above questions.

2. By use of the following questions, demonstrate the need for budgeting the addition of livestock enterprises to utilize available resources.

   a. How many sell extra corn each year? (Hay, unused pastures, etc.)

   b. What other possibilities are available to utilize this corn?

   c. How much return can be expected from these possibilities?

3. Introduce a unit budget of a suggested enterprise. Discuss the costs and how to arrive at the costs.

B. Student:

1. Budget costs of production

IV. OUTLINE OF INSTRUCTIONAL CONTENT

Information contained in Teaching Unit C-VII of the Ohio Farm Business Planning and Analysis Program and Teaching Units will be helpful in teaching this unit.

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

Kansas Farm Management Handbook, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

Planning Livestock for the Farm, VAS 2012b, Vocational Agriculture Service, University of Illinois, Urbana-Champaign.

FARM MANAGEMENT III

UNIT 9: INCREASING GROSS INCOME PER $1000.00 INVESTED

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to make decisions as to where to invest money to yield the most return.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Explain partial budgeting and tell why it may be used to determine the advisability of making changes within an enterprise.

B. Complete partial budgets for various enterprises.

C. List the four categories of partial budgeting.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Ask the class the following questions:

a. Do the highest yields per acre always yield the highest net return per acre?

b. At what point in the application of fertilizer on corn do you think we reach the point of diminishing returns?

c. Do we often continue doing the same things because we have always done them a certain way without investigating other alternatives?

2. This unit is a good place to introduce partial budgeting if it has not been done previously. If it has been taught previously, this is a good place to review the procedure.

B. Student:

1. Work a partial budget problem.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. The use of partial budgeting as a method of making decisions

1. Partial budgeting is a method which may be used to determine the most profitable enterprise or to determine the advisability of making changes within an enterprise

2. The procedure consists of adding, subtracting or altering a part

of the farm business to decide whether the change would be economically feasible. Only costs or returns involved in the change have to be considered in the budget; it does not include all costs (operating and overhead) and returns affected in the change and not just the obvious.

3. This can be done with accuracy on scrap paper but it is usually better to use some type of organization to keep figures straight and systematic enough to assure all items are considered equally for both sides.

B. A partial budget can be broken down into four categories. Additional receipts (AR) and reduced costs (RC) would be on the plus or positive side of the ledger, and additional costs (AC) and reduced receipts (RR) would be on the minus or the negative side.

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

Budgeting - A Tool for Business Planning, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

FARM MANAGEMENT III

UNIT 10: ADJUSTING MACHINERY INVESTMENTS TO INCREASE NET PROFIT

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to make decisions relative to his farm machinery selection and replacement program in order to increase net farm profit.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Discuss why machinery cost per hour is lower with greater use.

B. Work break-even analysis problems.

C. Discuss the economics of a trade before it is made.

D. Explain how joint ownership can reduce machinery costs and investments.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Have each class member check the power and machinery investment and costs per acre on their Farm Business Analysis and compare it with similar type operations. Discuss some reasons why they may be high or low.

	Dairy	Swine	Beef	Full Owner Crop	Tenant Crop
Investments per acre	$100	$75	$75	$60	$48
Costs per acre	40	35	35	26	20

a. If their investments and costs per acre are high, consider these tips for cutting machinery costs.

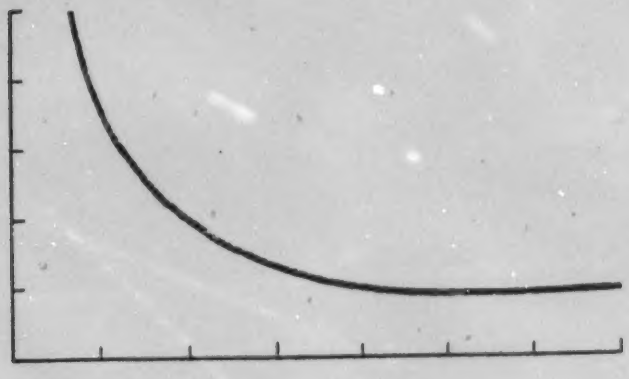
1. Farm more acres by owning, renting or custom work.
2. Compare the costs of owning a machine and custom hiring.
3. Figure the economics of a trade before you make it.
4. Reduce machinery investment by joint ownership.
5. Lease machinery.
6. Extend useful life of equipment through proper operation and adjustments, and preventive maintenance.

7. Keep complete records on the costs of operating equipment for future reference in making machinery decisions.

2. Present the graph in the following example and discuss why we have lower cost per hour with greater use.

Example:

Two farmers each have a $12,000 tractor, however, Farmer A only farms 300 acres, while Farmer B farms 800 acres. Both estimate the life of the tractor to be 7 years and use a straight line method of depreciation.



	Farmer A – 300 A.	Farmer B – 800 A.
Fixed Costs:		
Depreciation – $\frac{\$12.000}{7\text{-year life}}$	$1,143.00	$1,143.00
Interest – $\frac{\$12.000}{2}$ x 8½%	510.00	510.00
Housing – $\frac{\$12.000}{2}$ x 2%	120.00	120.00
Insurance – $6,000 x .5%	60.00	60.00
Total	**$1,833 ÷ 300 = $6.11/A.**	**$1,833 ÷ 800 = $2.29/A.**

Variable Costs:		
Labor –		
3 hr./A. x $3/hr.	$2,700.00	$7,200.00
Repairs* –	1,080.00	2,880.00
Fuel and lubrication* (1,590 gal)	1,936.00	4,694.00
Total	$5,716 ÷ 300 = $19.05/A.	$14,774 ÷ 800 = $18.46/A.

Total Cost Per Acre:

Cost to Farmer A:

$6.11 + $19.05 = $25.16/A.

Cost to Farmer B:

$2.29 + $18.46 = $20.75 (1 A)

B. Student:

1. Work problems on break-even.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Acres on which a machine would have to be used per acre to be equivalent to hiring the work done.

Use break-even formula:

$$\frac{\text{Annual fixed ownership costs}}{\text{Custom rate per acre - variable costs per acre}} = \text{Operational acres to justify ownership}$$

Example: Refer to the sample problem included in this unit.

1. Assumptions:

a. $25,700 cost for basic unit plus a 4-30" row corn head.

b. $3,000 salvage value on a 7-year life.

c. The machine will be used on corn only.

d. Corn could be custom hired for $12.00 per acre.

2. Before the farmer makes the final decision on deciding whether he should buy, lease or custom hire, he should consider the factors listed on the bottom of the worksheet "A Method for Determining Feasibility of Owning a Machine."

B. The economics of a trade before you make it.

1. Consider what benefits will result from the trade.

a. Provide enough additional returns to compensate for the additional costs.

1. Increased yields due to earlier planting ability. The summary of 252 observations of county corn club growers in Northwest and West Central Ohio show a one-bushel loss in corn yield per acre for each day delay in planting after May 10; e.g.

5-day delay planting x 1 bu./acre/day = 5 bu. loss
10-day delay planting x 1 bu./acre/day = 10 bu. loss
15-day delay planting x 1 bu./acre/day = 15 bu. loss
20-day delay planting x 1 bu./acre/day = 20 bu. loss

Using the above example, if a farmer raised 200 acres of corn and he was 10 days late in planting his corn, this would amount to 10 bu. per acre loss x 200 acres = 2,000 bu. x $3/bu. = $6,000 loss.

2. Less repair expenses

Example: Annual costs of hay stacker for 100 acres.

	Full Owner	50% Owner
Depreciation	$ 689	$ 344
Interest	324	162
Insurance	27	14
Housing	68	34
Fuel	64	64
Repairs (lubrication)	136	68
Total Annual Costs	$1,308	$ 686

a. Advantages

1. Reduces total costs per unit of use. In the above example, the cost for the full owner would be $13.08/acre compared with $6.86 if he shared the ownership. Fixed costs are shared equally. Operating costs are paid by user.

2. Reducing investments allows capital for other expenses or investments. In the above example, by sharing the stacker, the initial investment of only 50% was $1,500 less than full ownership.

a. Disadvantages

1. Machine may not be available to both parties at the time it is needed for use.

2. Housing, insurance and repair costs must be decided prior to purchase to avoid later problems. If one owner houses the machine the entire year, compensation from the other owner may be desirable. The owner housing the machinery will likely provide insurance also. Repairs may be divided 50-50 or on a per-acre-use basis.

3. Care, service, and maintenance provided by one party may not be agreeable with the other party. Trouble may develop between parties if one is more conscientious than the other on maintenance and care.

C. Leasing Machinery

1. Advantages of Leasing

a. Short-run payments may be deducted as a cash expense (saving tax money).

b. Full-time use of machinery at a proportion of total costs when used only a short time out of the year.

c. May help distribute expenses while other purchases are being made.

d. Provides an opportunity to actually try out this equipment under actual farm conditions.

e. May allow one-season expansion in operation without tying up capital.

f. Provides an opportunity for beginners to start without large investments.

2. Disadvantages and other considerations

a. These payments are listed as a debit (on Net Worth) and may not free as much for operating capital as expected.

b. Will this equipment be available (short-run) when you need it?

c. Will needed seasonal or daily labor be available to help operate this equipment.

d. What type of lease do you have or clause in it that accounts for wet weather tie-up, break-down, etc., that might occur?

e. What condition is this equipment in when you get it and who is responsible for maintenance, repairs, variable costs, insurance, etc.?

f. With long-term leasing, you may pay more than total cost of equipment or pay for total even though you want to return it before the lease is expired.

g. If you use the option to purchase (long-term) before lease expires, you must pay back any tax deduction you have taken.

V. INSTRUCTIONAL MATERIAL

A. A Method for Determining Feasibility of Owning a Machine (worksheet and sample problem).

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

Kansas Farm Management Handbook, Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

"Leasing vs. Purchase of Farm Machinery," UF-26, Department of Economics, Kansas State University, Manhattan.

WORKSHEET

A METHOD FOR DETERMINING FEASIBILITY OF OWNING A MACHINE

Machine Considered _____ No. Acres to Be Used On _____

Step 1. $\frac{\text{Purchase price}}{\text{Expected years of life}}$ = Annual depreciation

Step 2. 8½% (short-term interest rate) x $\frac{\text{Purchase price}}{2}$ = Interest on invested capital

Step 3. $\frac{\text{Purchase price}}{2}$ x $.40 (rate per $100) = Insurance

Step 4. Sq. ft. space occupied x $.20 per sq. ft. = Housing cost

Step 5.

Annual depreciation	$ _____
Interest on invested capital	$ _____
Personal property tax	$ _____
Insurance	$ _____
Housing	$ _____
Total overhead (fixed) costs	$ _____

Per Acre

Step 6.

Fuel cost	$ _____
Lubrication cost	$ _____
Repairs	$ _____
Operator's labor ($3.50/hour)	$ _____
Total variable cost/acre	$ _____

$ _____ Variable cost per acre x _____ No. of acres per year = $ _____ Total variable cost per farm.

Step 7.

Total fixed costs	$ _____
+ Total variable costs	$ _____
Annual cost of owning machine	$ _____

Step 8. $\frac{\text{Annual cost of owning machine}}{\text{No. of acres to be used on}}$ $ _____ Cost per acre

Step 9. Compare (1) Cost per acre with (2) Custom rate per acre (3) Leasing rate/A.
Decision = _____

Step 10. Break-even acreage = $\frac{\text{Annual overhead (fixed) costs}}{\text{Custom rate per acre} - \text{Variable cost per acre}}$

Break-even acreage = _____ = _____ Acres

Other factors to consider before making final decision:

a. Ability and availability of custom workers
b. Timeliness of operation
c. Mechanical ability of farmer
d. Operating ability of farmer
e. Labor situation on farm
f. Individual farm operation
g. Obsolescence
h. Possibility of leasing machine
i. Machine repair situation
j. Long-time farm plan
k. Financial condition of farm business – (1) Debt load, (2) Repayment ability, (3) Capital resources.

ANSWERS TO WORKSHEET

A METHOD FOR DETERMINING FEASIBILITY OF OWNING A MACHINE

Machine Considered 4-30" Combine No. Acres to Be Used On 400 A./year

Step 1. $\frac{\text{Purchase price ($25,700) - Salvage ($5,000)}}{\text{Expected years of life (7)}}$ = Annual depreciation ($20,700)

Step 2. 8½% (short-term interest rate) x $\frac{\text{Purchase price}}{2}$ = Interest on invested capital

Step 3. $\frac{\text{Purchase price}}{2}$ x $.40 (rate per $100) = Insurance

Step 4. Sq. ft. space occupied x $.20 per sq. ft. = Housing cost

Step 5.

Annual depreciation	$ 2,957.00
Interest on invested capital	$ 880.75
Personal property tax	$
Insurance	$ 130.00
Housing	$ 40.00
Total overhead (fixed) costs	$ 3,988.00
	Per Acre

Step 6.

Fuel cost	$ .86
Lubrication cost	$ .28
Repairs	$ 3.68
Operator's labor ($3.50/hour)	$ 1.86
Total variable cost/acre	$ 6.68

$ _____ Variable cost per acre x _____ No. of acres per year = $ 2,672. Total variable cost per farm.

Step 7.

Total fixed costs	$ 3980.00
+ Total variable costs	$ 2,672.00
Annual cost of owning machine	$ 5,652.00

Step 8. $\frac{\text{Annual cost of owning machine}}{\text{No. of acres to be used on}}$ $ 14.13 Cost per acre

Step 9. Compare (1) Cost per acre with (2) Custom rate per acre (3) Leasing rate/A.
Decision = _____

Step 10. Break-even acreage = $\frac{\text{Annual overhead (fixed) costs}}{\text{Custom rate per acre} - \text{Variable cost per acre}}$

Break-even acreage = $\frac{\$3,980}{\$14.00 - \$6.68} = \frac{\$3980.}{\$7.32} =$ 543 Acres

Other factors to consider before making final decision:

a. Ability and availability of custom workers
b. Timeliness of operation
c. Mechanical ability of farmer
d. Operating ability of farmer
e. Labor situation on farm
f. Individual farm operation
g. Obsolescence
h. Possibility of leasing machine
i. Machine repair situation
j. Long-time farm plan
k. Financial condition of farm business – (1) Debt load, (2) Repayment ability, (3) Capital resources.

FARM MANAGEMENT III

UNIT 11: ADJUSTING BUILDING AND IMPROVEMENT INVESTMENTS

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to determine the investments in buildings and improvements that will bring the highest net profit to his farm.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. List eight items which cause a building to become obsolete.

B. Determine the annual net benefit of an investment.

C. List ways of increasing the versatility of farm buildings.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Discuss the following questions:

   a. On what basis can farm buildings be justified?

   b. How may buildings and equipment add to the value of the farm's ability to produce?

   c. Why are buildings and equipment not strictly production assets to all farmers?

B. Student:

1. Work through sample problem with instructor and determine when a building becomes obsolete.

2. Work through sample problem with instructor and determine if a building will be worth the cost of investment.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Items which cause a building to become obsolete:

1. Labor or labor requirements change

2. Equipment needs change

3. Disease

4. Space requirement change

5. Maintenance costs become too high

6. Herd size changes
7. Owner's health changes
8. Ownership changes
9. Enterprise changes
10. Markets or market requirements change

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

FARM MANAGEMENT III

UNIT 12: ADJUSTING LABOR TO INCREASE GROSS INCOME PER MAN EQUIPMENT

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to identify ways to increase income through better utilization of labor.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. List ways of utilizing excess labor to increase net returns.

B. Determine how much a farmer can afford to pay for an additional man.

C. List ways an operator can provide incentives so hired labor will perform more conscientiously and efficiently.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Have a person in a management position speak to the group on labor management.
2. Review the labor efficiency section of the farm business analysis sheet and point out that if there are less than 300 PMWU of production and maintenance work per man equivalent, some attention should be given to developing more productive work and a larger volume of business.

B. Student:

1. Have each member of the class calculate the PMWU per year for his farm by using the following charts. After they have calculated the PMWU for their farms, have them place this record on the monthly chart included with this unit and develop a labor use curve.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Utilizing excess labor in order to increase net returns.

1. After developing a labor distribution curve, a crop farmer finds that he has the following amount of labor available:

December	120 hours
January	200 hours
February	180 hours
March	140 hours
Total	640 hours

2. In considering possibilities for utilizing his excess labor, he finds that the time required to feed feeder hogs (60 to 210 pounds) would be 1.3 hours per head.

3. 640 hours available ÷ 1.3 hours = 492 feeder hogs he could take care of with this available labor.

4. In considering this possibility, the farmer must consider other requirements such as the availability of buildings and equipment and feed. After considering these requirements, the farmer finds that buildings are his limiting factor and the maximum number he could handle is 200 head. With hogs selling at $20.00 cwt., he could realize a net return of $3.20 per head or $640.00 by feeding 200 feeder hogs.

5. He decides to feed the 200 head of feeder hogs which would require 1.3 hours per head or 200 x 1.3 = 260 hours utilized by the feeder hogs.

   Note: Feeder steers could be considered as another possibility.

6. Since he had 640 hours available and only utilized 260 hours with the feeder hogs, he still has 380 hours available.

7. In looking for other ways to utilize this labor, he examines his farm business analysis report and finds that he has been spending $2,100 per year for machinery repairs. He has a building that can be used for a shop which can be heated for a cost of $280.00. The farmer is mechanically inclined and by purchasing $340.00 worth of special tools to supplement what he has, he can do most of his machinery repair work. He would have reduced costs of $2,100 and added costs of $620 (280 + $340) leaving a net of $1,480. He estimates he can do the machinery repair work in 300 hours which would mean $1,480 ÷ 300 or a return of $4.93 per hour.

B. Determining how much a farmer could afford to pay for an additional man.

1. Assume the following example of a farmer who is an owner-operator:

   a. The farmer produces 200 acres of corn.

   b. In an average year, he can accomplish the job with his 10' disk and 4-row planter. His two tractors have sufficient horsepower to accomplish the job in 10 days.

      1. He can disk one acre of corn in 30 minutes with 10' disk.

      2. He can plant one acre of corn in 30 minutes with 4-row planter.

   Source: Farm Management Workbook by Shaudys, R., Reeser and Baker, R.

   c. If no man is hired, the operator would spend half of the time disking and the other half of the time planting, but, if he hired one man, this would allow the operator to devote his efforts to planting (about five days would be required).

   d. From April 21 to May 10 - on the average, 9 days are available for field operations (Farm Management Handbook, Section V, B1).

2. Problem - Assuming the owner-operator is 10 days behind optimum planting date for his area because of rainy weather conditions, how much could he afford to pay one hired man to help if this man would reduce disking and planting time from 10 days to 5 days?

   a. No Hired Man:

      10 days delay x 1 bu./acre/day = 10 bu. x $3/bu. = $30

      $30 loss/acre x 200 acres = $6,000

   b. Hired man:

      Would reduce the time by one-hllf. (This would enable the farmer to plant while the hired man disks.)

      5 days delay x 1 bu./acre/day = 5 bu. x $3/bu. = $15

      $15 loss/acre x 200 acres = $3,000

      $6,000
      - 3,000

      $3,000 for 5 days, thus $600/day breakeven point.

3. The importance of timeliness in hay-making.

C. Providing incentive so hired labor will perform more conscientiously and efficiently.

1. The following arrangements are some possibilities as listed in Successful Farming Vocational Agriculture Teaching Units as incentives beyond the regular employees paycheck.

   a. 3% - 6% of the milk check
   b. 50¢ - $1.00 per hundred pounds of pork
   c. 50¢ per pig weaned
   d. 5% - 10% of gross income from hogs
   e. 5¢ per dozen eggs
   f. $1 to $3 for each calf raised
   g. 2¢ to 5¢ per bushel of grain raised

2. The above incentives may not only benefit efficiency for the operator but it may be a means of getting and keeping good hired labor.

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

"Managing Hired Farm Labor" Department of Economics, Cooperative Extension Service, Kansas State University, Manhattan.

FARM MANAGEMENT III

UNIT 13: GOVERNMENT LABOR REGULATIONS

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to list the labor regulations that affect the farm manager.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Understand the social security regulations affecting farmers.

B. Explain federal regulations affecting the hiring of young people.

C. Outline 1970 Occupational Safety and Health Act.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

B. Student:

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Social Security

1. Rates

The social security rate to be deducted for hired labor during 1972 is 5.2%. The employer deducts the 5.2% from wages of employees who qualify and matches it with another 5.2%, for a total of 10.4% of wages paid. This changes to 5.85% for 1973, 1974, and 1975.

2. Deductions

An employer must deduct social security on hired labor used on the farm if total wages paid equal $150 or more for the year or if a person works 20 days or more during the year.

Children under 21 years of age, working for their parents, are not required to pay social security taxes. Thus, the parents need not deduct social security on such wages.

3. Custome hire or hired labor?

If a farmer hires a custom operator to plow, plant, clear land,

pick up hay, or perform similar operations where the man hired to do the job furnishes his own equipment, this is custom hire and should not be entered as hired labor. If a farmer hires a person to haul hay at so much a bale but furnishes all the equipment and the worker furnishes only the labor, it is hired labor regardless of the method used in determining the wage scale.

4. When deposits are due

When the employer's (farmer's) tax obligation for social security on hired labor exceeds $100, a deposit must be made before the 15th of the month following the end of the month in which the $100 is reached. Example: If at the end of April, $1,000 in wages had been paid to one or several individuals, all earning $150 or more, a deposit of $104 is due and must be paid before May 15th.

5. How to make deposits

Form 511, Federal Tax Deposit, FICA Taxes for Agricultural Workers, is used for this purpose. Take the form to your bank and write a check for the amount of deposit. The bank will give the depositor part of the Form 511 as a receipt, which they will need when filling out final Form 943.

B. Employing Young People

1. Current child-labor requirements

a. A farmer may employ minors 16 years of age and over at any time in any agricultural occupation.

b. A farmer may not employ a minor under 16 at any time in any agricultural occupation declared hazardous by the Secretary of Labor except:

1. His own child on the home farm, or

2. A child 14 to 15 years of age who has completed an educational or training program for which an exclusion has been obtained from the Secretary of Labor.

c. A child under 16 may not be employed in agriculture during school hours except by his parents on the home farm.

C. Occupational Saftey and Health Standards Applicable to Agriculture

1. The term employer, as it relates to farmer-employers, was defined by the Department of Labor on January 21, 1972, as follows: "Any person engaged in an agricultural activity employing one or more employees comes within the definition of an employer under the Act, and therefore is covered by its provisions. However, members of the immediate family of the farmer-employer are not regarded as employees for the purpose of this defintion."

2. Storgae and handling of anhydrous ammonia

a. An anhydrous ammonia trailer attachment to the towing vehicle

must have safety chains properly tied with not less than 3/8" diameter welded steel links.

b. A five gallon container filled with fresh clean water shall be carried on or with all anhydrous ammonia tanks at all times.

c. No person shall pull more than one anhydrous ammonia container.

3. Slow moving vehicles

This standard relates to the use of the SMV Emblem on Vehicles traveling at speeds of 25 mph or less on public roads. Any farmer-employee operating a SMV on a public road today is required to display the official SMV emblem.

4. Record-keeping requirements:

a. Display of Safety and Health Protection on-the-job poster.

b. Keeping records on file for five years.

c. Maintaining a log of occupational injuries and illness on OSHA Form 100.

d. Completing a supplemental record of each injury or illness on OSHA Form 101.

e. Prepare an annual summary report on OSHA Form 102.

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

"Managing Hired Farm Labor," Cooperative Extension Service, Kansas State University, Manhattan.

FARM MANAGEMENT III

UNIT 14: PLANNING TRANSITIONAL STAGES

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to prepare for smooth transitional stages.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Determine what transitional stages are and when they sould occur.

B. List ways of planning for smooth transitional stages.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

B. Student:

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

FARM MANAGEMENT III

UNIT 15: FARM FINANCIAL MANAGEMENT

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to develop a financial plan and debt repayment schedule.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Point out the characteristics of a good debt repayment schedule.

B. List types of loans and characteristics of each.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Ask a group of farmers the following questions:

   a. Will you have enough money to take a 2-week vacation starting August 17?

   b. How much cash does it take during an average month to operate the farm business and meet the farm family's bills?

   c. If the answer to the above question is not known, then what can be done to quickly provide information?

2. Ask local lender to talk to class on risk-bearing capacity and how they determine whether or not a man or enterprise is a good risk.

3. Show financial statements of two farmers; then give out forms for farmers' own financial statements.

Assets	Farmer A	Farmer B
Cash	$ 600	$ 2,700
Grain, feed	2,400	3,900
Livestock	5,800	6,900
Equipment	5,000	5,600
Land	30,000	- - - -
Total	$43,800	$18,500

Liabilities	Farmer A	Farmer B
Store bills	$ 500	$ 100
Unpaid taxes	400	- - - -
Chattel mortgage	5,400	- - - -
Farm mortgage	22,000	- - - -
Total	$28,300	$ 100
Net Worth	$15,500	$18,400

In the example, Farmer A has assets worth more than twice as much as Farmer B. Farmer A is, however, heavily in debt. He has a mortgage loan on his farm; a chattel mortgage on his livestock and other personal property; and he owes store bills and taxes of considerable amount. His net worth is, therefore, smaller than that of Farmer B Also, Farmer A has few liquid assets on which he could raise money quickly.

Farmer B has few debts and a larger net worth. In addition to $2,700 cash, he has grain and livestock to sell (liquid assets) to meet operating expenses.

Therefore, Farmer A is a less favorable credit risk than Farmer B.

Question: How do we determine when credit should not be used?

B. Student:

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Use the following procedure to point out the characteristics of a good debt repayment schedule.

1. Ideal repayement plans should be drawn up so that the improvements pay for themselves by the time the final payment is made.

   Example: If you borrow money to pruchase feeder cattle, repayment of the loan should be made when the cattle are sent to market.

2. A loan should carry rather liberal prepayment privileges without having to pay penalties. This will permit a farmer to make advance payments on the principle during higher income years.

3. The cost of borrowing money can be kept at a minimum by borrowing on a budget plan.

   Example: If a farmer needs $5,000 for this year's operations:

January 15 -	$2,000.00	purchase of equipment
May 15 -	1,800.00	labor, fertilizer and seed
June 15 -	200.00	taxes
October 15 -	1,000.00	insurance
	$5,000.00	

Ask the question, "How could this be borrowed at the cheapest cost?" Discuss the various answers, then point out the following: If he borrowed the full amount of $5,000.00 on January 15 at an interest rate of 8.5% for a full year, he would pay $425.00. But he can borrow on the budget plan and he will receive his loan in parts as needed and pay back all the money at the maturity of the note next January 15. This is the way the interest would be figured:

January 15 -	8.5% on $2,000 for one year	$170.00
May 15 -	8.5% on $1,800 for 8 months	102.05
June 15 -	8.5% on $200 for 7 months	9.92
October 15 -	8.5% on $1,000 for 3 months	21.25
	Total interest	$303.22

If the farmer could sell $2,000 worth of corn by November 15, he would make a further saving of three month's interest or $42.50. This would be a total saving of $164.28 compared with the cost of borrowing all the money for a full year.

4. Consolidate as many debts as possible because you will likely be given much more considerate treatment from your lender than if you have many small outstanding debts.

5. Usually it is best to amortize a loan, especially if it is a long-term loan. Using this method of repayment, some money is remitted on the interest and principal each payment. There are two general types of payments which, in the federal land bank system, are referred to as the equal payment and the decreasing payment plan. The equal payment plan calls for equal payments throughout the life of the loan. The payment of the principal increases as the interest decreases. Table II shows the rate of amortization for a $1,000 loan at 7.5% interest and a term of 20 years. Thus, for a $1,000 loan, an installment of $98.90 is paid annually during the life of the loan except for the final payment of $90.54. This installment covers interest on the unpaid balance and the amount to be applied on the principal. The decreasing payment plan calls for a fixed amount of principal to be paid each year plus interest on the unpaid balance. It will be noted that in the $1,000 loan illustrated in Table III, the payments are larger at the beginning of the period than at the end because of the greater amount of interest that is due.

6. How long should the farm operator take to repay his loan? In general, the annual loan cost depends on how long you take to repay and the interest rate. Here is the yearly sum needed to repay a $1,000 loan at 7% and 12%.

	Annual Cost	
Years to Pay	7%	12%
2	$553	$592
3	381	416
4	295	329
5	244	277

a. Thus, it takes three anual payments of $381 to pay a $1,000 loan at 7% interest. By taking four years, the annual cost drops to $295, but at 12% the cost would be $329 a year for four years.

b. Generally speaking, for maximum repayment capacity, the length of loan should correspond with two things:

   1. the length of time it takes to recover the investment when the borrowed funds are used for self-liquidating purposes,

   2. With the net income-producing capacity of the borrower when funds are used for other purposes.

c. Even in view of the above explanation, if the loan carries pre-payment privileges without penalties, the loan should be extended over the longest period the lender will allow. Generally, cash invested in the business will give a higher return than if it is used to repay a loan. Therefore, it is advisable to obtain as much as possible on long-term real estate loans of 20 years or more.

d. A farm that had an average earnings of six thousand dollars to be applied toward interest and principal payments with interest at an annual rate of 7.5% would carry the following amount of debt capacity.

Repayment Period for Principal	Debt Capacity
1 year	$ 5,550
10 years	47,672
30 years	69,042

7. How much can a farmer afford to spare each year for debt repayment? This will vary with the type of operation and with the amount needed for family living expenses, income tax, etc. A good set of farm and family records will help to estimate the amount.

   Rule of Thumb: In general, a farmer should be cautious of committing over 20% of his gross income for principal and interest payments.

   a. A farm that is repaying debts in 10 years at an annual interest rate of 7.5% could carry the following amount of debt depending on the amount of earnings that are available to be applied toward

interest and principal payments.

Dollars Available	Debt Capacity
$ - - - -	$ - - - -
3,000	23,750
6,000	47,672
12,000	95,328

8. What tool can a farmer use to look ahead to plan not only the amount and timing of borrowed funds but also their repayment? This can best be done by annual planning in the following order: Annual planning should include projections of the crop and livestock program, cash flow scheduled and financial results of the operation in terms of anticipated profit or loss.

   a. The primary purpose of preparing crop and livestock projections is to determine as accurately as possible the receipts and expenses by major categories resulting from the farm operation. They provide the data necessary for a profit and loss statement.

B. Types of Loans

TABLE 1

TYPES	PURPOSE	SECURITY	LENGTH OF TERM	REPAID FROM	USEFUL LIFE AS ASSET
Short term or self-liquidating	Operating expense, feeder livestock	Promisory note or mortgage	1 yr.	Gross	1 yr.
Intermediate or partially self-liquidating	Depreciable assets; i.e., breeding livestock, machinery and buildings	Chattel or real estate mortgage	1 to 7 yrs.	Net & Gross	More than life of loan
Long term or non-self-liquidating	Non-depreciable assets; i.e., land	Real estate mortgage	7 to 40 years	Net	Infinity

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Kansas Farm Management Handbook, Department of Economics, Kansas State University, Manhattan.

Farm Business Planning and Analysis Program and Teaching Units, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus.

Using Credit to Increase Farm Earnings, VAS 2024a, Vocational Agriculture Service, University of Illinois, Urbana-Champaign.

TABLE II

EQUAL PAYMENT PLAN 20-YEAR AMORTIZATION TABLE

A loan of $1,000 at 7.5% interest repayable in 20 years by annual installments of $98.90 which includes the interest and part of the principal.

Payment Number	Interest	Payment on Principal	Unpaid Balance
1	$74.27	$23.82	$976.18
2	73.27	24.82	951.36
3	71.40	26.69	924.67
4	69.40	28.69	895.98
5	67.25	30.84	865.14
6	64.94	33.15	831.99
7	62.45	35.64	796.35
8	59.78	38.31	758.04
9	56.91	41.18	716.86
10	53.82	44.27	672.59
11	50.50	47.59	625.00
12	46.93	51.16	573.84
13	43.09	55.00	518.84
14	38.97	59.12	459.72
15	34.53	63.56	396.16
16	29.76	68.33	327.83
17	24.64	73.45	254.38
18	19.13	78.96	175.42
19	13.21	84.88	90.54
20	6.84	83.70	- - - -

TABLE III

DECREASING PAYMENT PLAN 20-YEAR ANNUAL AMORTIZATION TABLE

A loan of $1,000 at 7½% interest in 20 years by annual installments of $50 principal plus interest.

Payment Number	Total Installment	Interest	Payment on Principal	Unpaid Balance
1	$125.00	$75.00	$50.00	$950.00
2	121.25	71.25	50.00	900.00
3	117.50	67.50	50.00	850.00
4	113.75	63.75	50.00	800.00
5	110.00	60.00	50.00	750.00
6	106.25	56.25	50.00	700.00
7	102.50	52.50	50.00	650.00
8	98.75	48.75	50.00	600.00
9	95.00	45.00	50.00	550.00
10	91.25	41.25	50.00	500.00
11	87.50	37.50	50.00	450.00
12	83.75	33.75	50.00	400.00
13	80.00	30.00	50.00	350.00
14	76.25	26.25	50.00	300.00
15	72.50	22.50	50.00	250.00
16	68.75	18.75	50.00	200.00
17	65.00	15.00	50.00	150.00
18	61.25	11.25	50.00	100.00
19	57.50	7.50	50.00	50.00
20	53.75	3.75	50.00	- - - -

FARM MANAGEMENT III

UNIT 16: COMPLETING THE K-MAR 105 FARM BUSINESS SUMMARY

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to complete the K-Mar 105 farm business analysis summary for his farm.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Use the codes used in the K-Mar 105 program.

B. List the types of forms used.

C. List the uses of the summary.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide students with a sample of the K-Mar 105 computer analysis summary.

B. Student:

1. Complete the analysis summary.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

"K-Mar 105 Electronic Management System", Department of Economics, Agricultural Experiment Station, Kansas State University, Manhattan.

FARM MANAGEMENT IV

UNIT 2: BUDGETING

I. TERMINAL OBJECTIVES

At the end of this unit, the student should be able to distinguish between complete, partial, and cash flow budgeting. He should be able to develop each type of budget to fix a particular operation.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Define budget.

B. List two parts of a budget.

C. Name and explain the difference between a complete and partial budget.

D. Describe what types of costs and returns to be concerned with in complete or partial budgeting.

E. Name three reasons for budgeting.

F. Name three ways in which a partial budget should be used.

G. Name four possible effects on net income when a change in the farm business takes place.

H. List the six steps to follow in developing a budget.

I. Identify factors which represent physical data in a budget.

J. Name three methods of arriving at price estimates when preparing a budget.

K. Name three limitations of most budgets.

L. Describe a cash flow budget and what information it makes available.

M. Determine three results which a well-planned cash flow budget reveals.

N. Calculate budgeting problems.

O. Demonstrate the ability to:

1. Complete a partial budget

2. Complete a cash flow budget.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide student with pamphlet "Budgeting-A Tool For Business Planning" and "Cash Flow Projection-A Short Run Feasibility Tool", Kansas State University, Farm Management Guides.

2. Provide students with information and assignment sheets.

3. Discuss information and assignment sheets.

B. Student:

1. Complete budgeting problems.
2. Complete budgets for individual enterprise.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. A Budget is:

an estimate for a specified time period, of the change in costs and returns which results from some change in resource use.

B. Budget contains two parts:

1. Physical relationships or input-output relationship.
2. Price relationship of input and outputs: specification of costs and returns.

C. Complete and partial budgeting

1. Information on budgeting is contained in instructional materials section.

D. Cost and Returns

1. Complete - total returns and total costs and resulting net returns.
2. Partial - only concerned with variable costs and returns or cost farmer can manipulate.
3. Cash Flow - only concerned with cash inflow and outflow of the operation.

E. Possible Effects on Farm Income when Farm Business changes:

1. Additional costs
2. Reduced returns
3. Additional returns
4. Reduced costs

F. Steps in developing a budget

1. Appraisal of the goals and objectives.
2. Inventory of the farm resources.
3. Selection of enterprises to be budgeted.
4. Selection of physical data to be used in the production process.
5. Selection of prices to apply to the physical data.
6. Calculation of the costs and returns.

G. Kinds of Physical Data

1. Crop yeilds.
2. Livestock feed requirements and production rates.
3. Labor requirements.
4. Fertilizer and spray responses.
5. Fuel and oil requirements.
6. Seeding responses.

(NOTE: Most of the available data is generally expressed as averages of a number of observations.)

H. Arriving at Price Estimates

1. Actual prices for previous year.
2. Projected price based on trends, production cycles, competition, or technology.
3. Arbitrary decision of future prices.
4. Example - Summary of budgets.

I. Limitations of Most Budgets

1. Comparisons cannot be drawn from budgets of one farm to another.
2. Budgets deal with future action.
3. Budget preparation is time consuming.

V. INSTRUCTIONAL MATERIALS

VI. REFERENCES

Farm Accounting and Business Analysis, Iowa State Pres, Ames, Iowa.

Farm Business Management, New York, The Macmillan Company.

Farm Management Laboratory Manual and Supplemental Text, Kansas State University, Manhattan.

Farm Record Keeping, Cooperative Extension Service, Kansas State University, Manhattan.

Farm Records - A Management Tool, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus, Ohio.

Farm Business Planning and Analysis Program, Ohio Agricultural Education Curriculum Materials Service, Ohio State University, Columbus, Ohio.

Farm Money Management, Ohio Agricultural Education Curriculum Materials Services, Ohio State University, Columbus, Ohio.

Kansas Core III, Budgeting.

Planning to have an Adequate Size of Business, Vocational Agricultural Service, University of Illinois, Urbana, Illinois.

Planning livestock for the Farm, Vocational Agriculture Service, University of Illinois, Urbana, Illinois.

Planning the Cropping System, Vocational Agriculture Service, University of Illinois, Urbana, Illinois.

Choosing Specific Crops to Grow and Estimating Production, Vocational Agriculture Service, University of Illinois, Urbana, Illinois.

Budgeting - A Tool for Farm Business Planning, Kansas State University Farm Mangement Guide, Cooperative Extension Service, Kansas State University, Manhattan.

Cash Flow Projection - A Short Run Feasibility Tool, Kansas State University Farm Management Guide, MF-275.

Farm Management: Principles, Budgets, Plans, Champaign, Illinois: Stripes Publishing Co., 1976.

Modern Agriculture Management, Reston, Virginia: Reston Publishing Co., 1978.

Agricultural Economics, Reston Virginia: Reston Publishing Co., 1978.

Partial Budget

Additional Costs	Additional Returns
Reduced Returns	Reduced Costs
A. Total annual additional costs and reduced returns	B. Total annual additional returns and reduced costs

Net change in income (B minus A)

Complete Budget

ITEM	RECEIPTS
LIVESTOCK	
B.F. of milk	4,018
Cattle	990
Hogs	2,829
Poultry or eggs	413
TOTAL I.S. RECEIPTS	8,250
CROPS	
Corn	140
TOTAL CROP RECEIPTS	140
HOME USE	
Dairy	128
Beef and veal	57
Eggs and poultry	123
TOTAL HOME USE	308
TOTAL GROSS INCOME	8,698

ITEM	EXPENSES
OPERATING or VARIABLE COSTS	
Livestock direct	$1,859
Crop direct	1,034
Other tractor	231
Equipment upkeep	198
Other hired labor	600
Electricity	199
Miscellaneous	325
TOTAL OPERATING EXPENSES	4,446
FIXED EXPENSES	
Taxes	220
Interest	150
Insurance	45
Improvements	314
TOTAL FIXED EXPENSES	729
TOTAL EXPENSES	5,175
NET FARM INCOME	$3,523

PARTIAL BUDGET FORM

100 ACRES OF MILO CUSTOM COMBINED @ $10.00 = $1000.00

OWNERSHIP EXPENSES

FIXED COSTS

$5000.00 (cost of combine)
- 200.00 (salvage value)
$4800.00

DEPRECIATION - $4800.00 - 10 YRS.	$480.00
INTEREST - 9% - 1/2 NEW COST (average investment)	216.00
INSURANCE - 0.45% OF NEW COST	22.50
HOUSING - 0.75% OF NEW COST	18.37
TOTAL FIXED COST	$736.87

OPERATIONAL COST

REPAIRS - 6% OF NEW COST	$300.00
FUEL - 36 HRS. @ $.95 PER HR.	34.20
LABOR - 36 HRS. @ $2.00 PER HR.	72.00
TOTAL OPERATIONAL COSTS	$406.20

$736.87 + $406.20 = $1143.07 - $1000.00 (custom cost) = $143.07
OR LOSS IF COMBINE WAS PURCHASED

ASSIGNMENT SHEET #1 – CALCULATE BUDGET PROBLEMS

Work each of the following partial budget problems. When completed return to instructor for his evaluation.

1. You have been hiring custom combining for 80 acres of crops at $9.00 per acre. You can rent a self-propelled combine for $6.00 an acre but will need to furnish your own fuel, oil, and grease. You estimate that the latter charges will amount to $.50 per acre.

   Assume your labor to be worth $2.00 per hour because of other uses at this time with .4 hour of labor needed per acre. You feel that you will be able to get an additional $1.00 worth of crops per acre by operating the machine yourself rather than hiring the job done by custom work.

   What is the estimated effect on net income if you change from custom hiring to renting?

2. A farmer has one tractor but is considering purchasing a smaller one, along with a cultivator, because: 1) his son, who has no alternative use for his labor, can do custom cultivating of 400 acres of corn for neighbors, and 2) the smaller tractor will be more economical for light work.

   The tractor will cost $4,000.00 and will have annual costs of 18 percent per year for the usual fixed costs plus repairs. The cultivator will cost $500.00 and will have annual costs of 16 percent of the new cost. The custom cultivating will return $1.75 per acre.

   The fuel cost for cultivating the corn will be $.45 per acre. The small tractor will save 100 gallons of fuel annually, at a price of $.50 per gallon, over the present tractor in performing light work.

   What is the estimated change in average annual net income with the new equipment?

b. Mr. Popkins owns his land and furnishes all of his own labor but uses borrowed capital to pay all operating expenses for wheat production. Using the information you developed in the above budget, returns to his owned resources are _____ per acre of wheat produced.

c. He complies with the wheat program by not overplanting his 200-acre wheat allotment. As a result, he is eligible for certificate payment of $1.38 per bushel times the normal yield per acre (30 bu.) on 43% of his allotment. His returns to owned resources (including returns to grain sales and certificate payments) are _____ per acre on _____ acres and _____ per acre on the remaining _____ acres.

ANSWERS TO ASSIGNMENT SHEETS

A. Assignment Sheet #1

1.

Additional costs		Additional returns	
Rental charge: 80 x $4.25 per acre =	$ 340	Additional crop harvested 80 x $1 per acre	$ 80
Fuel, etc.: 80 x $.35 per acre =	28		
Labor for operating combine: .4 hr. x 80 acres = 32 hr. 32 x $1.50 per hour =	48		
Reduced returns		**Reduced costs**	
None	$	Custom charge: 80 x $5 per acre	$ 400
a. Total annual additional costs and reduced returns	$ 416	b. Total annual additional returns and reduced costs	$ 480 -$ 416 +$ 64

Net change in income (b minus a)

FARM MANAGEMENT IV

UNIT 3: ECONOMIC PRINCIPLES

I. TERMINAL OBJECTIVE

At the end of this unit the student should be able to understand and apply the basic economic principles as they apply to farm financial management.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. List the four major economic resources.

B. Understand the law of diminishing physical returns.

C. Explain what is meant by total physical product, marginal physical product, and average physical product.

D. Describe the three stages of production.

E. Explain in what stage of production is the decision-making area.

F. Describe the law of diminishing economic returns and how to calculate it.

G. Explain how net returns will be maximized or losses minimized where marginal cost is equal to marginal return.

H. Apply the principle of equimarginal returns.

I. Understand the principle of opportunity cost.

J. Explain the concept of decreasing rate of substitution.

K. Describe the concept of constant rate of substitution.

L. List the three types of production relationships and explain in which type the highest gross value of production will occur.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide the student with information and assignment sheets.
2. Discuss information and assignment sheets.

B. Student:

1. Complete assignment sheets as they apply to your operation.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Classification of Resources

1. Land - natural wealth that is created without the use of human labor.

FARM MANAGEMENT IV

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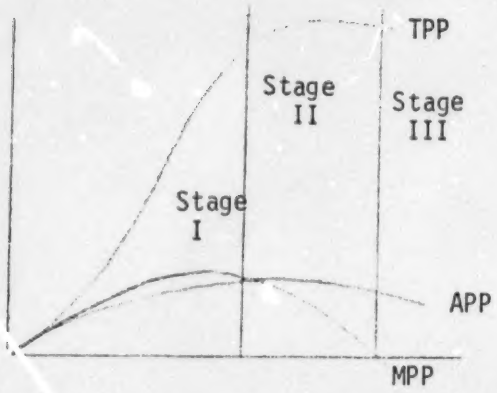
IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Classification of Resources

1. Land - natural wealth that is created without the use of human labor.

Example:



E. Law of Diminishing Economic Returns

Based on the law of diminishing physical returns except, the price is included.

F. Profit Maximization

This will occur when the marginal cost, the cost of producing one more unit of output, is equal to the marginal revenue, or the price of the output.

If marginal cost is less than marginal revenue can always return more by using more variable resource.

Example:

Variable cost of Producing one bushel of wheat	Price per bushel of wheat
$ 2.00	$ 3.00

It costs you $2.00 to make $3.00, so you would use more resource.

If marginal cost is greater than marginal revenue you need to use less variable resource.

Example:

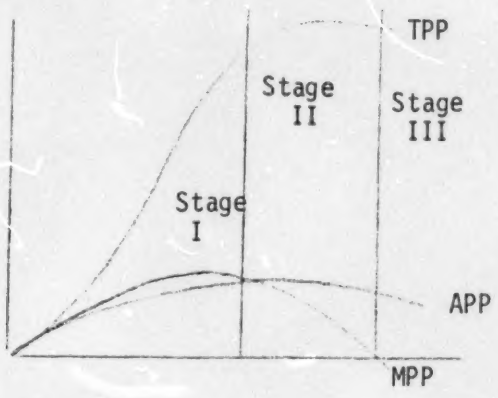
Variable cost of Producing one bushel of wheat	Price per bushel of wheat
$ 5.00	$ 3.00

It cost $2.00 more than you recieved to produce that one bushel.

G. Equimarginal returns allocate a resource among several alternative uses in such a way that the marginal returns are equal in all uses.

H. Opportunity costs is the cost of using a resource in one way and the return that would be obtained from using it in its most profitable alternative use.

Example:



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H. Opportunity costs is the cost of using a resource in one way and the return that would be obtained from using it in its most profitable alternative use.

V. INSTRUCTIONAL MATERIALS

VI. REFERENCES

Farm Management-Principles, Budgets, Plans. Champaign, Illinois: Stripes Publishing Co., 1968.

Modern Agriculture Management, Reston Publishing Co., Reston, Virginia, 1978.

Farm Business Analysis, The MacMillan Co., New York, 2 ed., 1972.

Agricultural Economics, Reston Publishing Co., Reston, Virginia, 1977.

Profit-Maximizing Principles, Ohio State University, Department of Agricultural Education, Columbus, Ohio, Agricultural Education Services, 1970.

The Farm Management Handbook, Danville, Illinois: The Interstate Printers and Publishing Co., 1972.

Farm Accounting and Business Analysis. Ames, Iowa: Iowa State University Press.

Economics for Agriculturalists, Columbus, Ohio: Grid Publishing Co.

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VI. REFERENCES

Farm Management-Principles, Budgets, Plans. Champaign, Illinois: Stripes Publishing Co., 1968.

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Farm Business Analysis, The MacMillan Co., New York, 2 ed., 1972.

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The Farm Management Handbook, Danville, Illinois: The Interstate Printers and Publishing Co., 1972.

Farm Accounting and Business Analysis. Ames, Iowa: Iowa State University Press.

Economics for Agriculturalists, Columbus, Ohio: Grid Publishing Co.

FARM MANAGEMENT IV

UNIT 4: LEASING ARRANGEMENTS

I. TERMINAL OBJECTIVES

At the end of this unit, the student should be able to understand the different types of leases and advantages of each type. They should be able to understand the legal considerations of leases and how to determine fair leases.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Define what a lease is.

B. Name four factors to consider when leasing land.

C. Explain the importance of putting a lease in writing.

D. Identify five key points to consider when developing leasing arrangements.

E. List the five basic requirements for a legal lease.

F. Explain the Kansas Leasing Laws.

G. Name two ways of determining equitable rent.

H. Describe how the concept of "returns according to contributions" can be used to develop a fair and equitable lease.

I. Explain why a good lease should provide incentive for optimal use or resources.

J. Name five types of leases.

K. Name three methods of establishing pasture rental rates.

L. List three methods of quoting pasture rent.

M. Identify five considerations when determining a fair price for pastures.

N. Calculate pasture rental rates using landowner's cost, livestock owner's earnings or alternative feed methods.

O. Explain what a crop share lease is and how it works.

P. Explain what factors to consider when determinging whether to crop share lease.

Q. List three items a good crop share lease will provide.

R. State why the fractional sharing of two crops should be the same between a tenant and landlord.

S. Calculate how to provide for proper fractional sharing crops.

T. Demonstrate the ability to set up a fair and equitable crop share lease.

U. Describe what a livestock-share lease is.

V. List five advantages and disadvantages of a livestock-share lease.

W. Define a cash lease.

X. List advantages and disadvantages of a cash lease.

Y. Explain how a tenant has greater flexibility when using a cash lease.

Z. Identify three methods of establishing cash rental rate.

AA. Demonstrate the ability to develop a fair cash lease.

BB. Describe what a flexible rent lease is.

CC. Explain why a flexible rent lease would be used.

DD. Describe how a flexible lease works.

EE. List the steps to follow when developing a flexible cash lease.

FF. Develop a flexible lease for students particular enterprise.

III. POSSIBBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide student with pamphlets "Leasing Kansas Native Pastures" MF-428, "Kansas Crop-Share or Corp-Share Cash Farm Lease" MF-426, "Establishing Kansas Cash Farm Rents" MF-424, "Kansas Flexible Cash Rent" MF-425, "Irrigation Lease Development and Testing" MF-429, "Kansas Laws for Farm Landlords and Tenants" Cir. 384, "Flexible Cash Rent for Cropland" MF-423 from Cooperative Extension Service, Kansas State Univeristy, Manhattan.

2. Provide student with sample lease forms: Kansas Cash Lease, Kansas Crop share or Crop share Cash Lease, Pasture rental leases, Livestock share lease, and Kansas Flexible Farm Lease - from Cooperative Extension Service, Kansas State University, Manhattan.

3. Provide student with information and assignment sheet.

4. Discuss information and assignment sheet.

B. Students:

1. Complete appropriate lease forms for their individual enterprises.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Lease is a contract in which the landlord gives the tenant possession and use of certain assets for a specified time period and for specified consideration.

B. Factors to consider when leasing land

1. Productivity of land.

2. Location of land in regard to farming headquarters.

3. Goverrment controls if any.

4. Cropping history.
5. Management history.
6. Identification of leasing rates.

   a. Variable costs shared accoding to each contribution

      (NOTE: Alfalfa will respond to top dressing with phosphate, the recommended amount costing $3.00. Gross income will increase by $5.00. The rental arrangements specify that the tenant furnish the fertilizer. From $3.00 spent by the tenant for fertilizer an additional $5.00 worth of alfalfa is produced. If the tenant is renting on a 50-50 basis, he will have spent $3.00 and received $2.50; the landlord will receive a net of $2.50. Under the arrangement, if the tenant were to divide the cost of fertilizer in the same proportion as the crop, each would furnish a $1.50 worth of phosphate and receive a gross return of $2.50).

   b. Return of each enterprise shared in same proportion

      (NOTE: The tenant rents alfalfa on a 50-50 basis, and peanuts on a ¼-3/4 basis. He may have an incentive to devote more of the farm resources to peanuts because it pays the greatest returns to the tenant for added input. The landlord may prefer more resources be used to produce alfalfa as alfalfa returns him more income.)

   c. Allow for returns on investments

      (NOTE: Many tenants have improvements through conservation practices but may not increase the annual income of the farm but contribute to the overall value of the farm.)

7. Length of lease

   a. Beginning date of the lease.
   b. Notice of termination
   c. Means of renewing the lease.
   d. Ways of cancelling lease.

C. Importance of Written Lease

A lease is a business agreement, either written or oral. Having the provisions written down reduces the chances of misunderstanding.

D. Key Points to Consider when Developing a Lease

1. Make sure there is economic gain for both the landowner and the tenant. Without a profit, someone will be unhappy and the arrangement is likely to fold.

2. Make sure all parties have agreed on the contribution each is to make.
3. Keep accurate and complete records and have everyone agree on who keeps them.
4. Decide who will have final authority when it comes to finalizing decisions on how differences in opinion will be resolved.
5. Decide on which parties has responsibility for what jobs or enterprises.
6. Make sure the lease provides for legal protection of both parties.
7. Put the lease in writing. A written lease protects the heirs if one of the original parties dies. In case of a dispute, a written lease prevents many legal problems by forcing all parties to consider explicitly the terms they are agreeing to.
8. Decide when a settlement of business earnings or rent will be made.
9. Decide how the lessee is to be compensated for improvements if he breaks the lease before the asset is depreciated out.
10. Agree on a means for sharing expenses and production. Try to share the production/income equitably - misunderstanding will be reduced.
11. Agree on the responsibility for maintaining buildings, facilities, and land fertility.

E. Basic Requirements for a Legal Lease

1. Accurate description of property leased.
2. Definite and agreed term over which the lease extends.
3. A definite and agreed price of rental, along with the designation of the time and place, at which the payment must be made.
4. The names of the lessor (landlord) and the lessee (tenant).
5. Signatures of the parties to the contract.

F. Kansas Leasing Laws

A good review is available in "Kansas for Farm Landlords and Tenants" Cooperative Extension Service, Kansas State University, Circular 384.

G. Determining Equitable Rent

1. Set share arrangement in advance.
2. Total all fixed inputs and identify proportion contributed by each party.
   a. Based on the idea that the owner and tenant share the gross income from the operation in same proportion that they contribute to the costs of production.

H. Provisions of a Good Lease

A good lease should provide incentive for optimal use of resources through equitable sharing arrangements.

I. Types of Leases

1. Cash Rent

Paying a fixed cost for property regardless of the type or yield of the crop being produced.

(NOTE: Cash rent leases are preferred by commercial farmers.)

2. Crop Share

An agreement between the landlord and the tenant whereby the lease is paid based on a percentage of the crop yield.

(NOTE: This leasing rate varies according to crops and the location within the state. Cash-crop farms frequently are rented for one-third of the grain. No definite pattern of rental practices has been established for legumes; too many variable factors are involved. It is important to note that the lease farm does not call for a specific number of crop acres. The word "approximate" is used.)

3. Livestock Share

An agreement between the landlord and the tenant whereby the landlord furnishes certain resources and the tenant owns certain other resources. The income is shared according to each contribution.

(NOTE: The livestock agreement for wheat pasture generally follows the pattern of the crop share leases; that is, the landlords are furnishing one-third of the basic livestock and the tenants two-thirds. In a livestock agreement, the increase is divided on the same basis as contribution. The ownership of the livestock is on an undivided basis and should remain that way throughout the lease.)

4. Fixed product rent

An agreement whereby the tenant pays the landlord a cash price determined by multiplying present prices times a share of the long-term yield.

5. Profit Sharing

An agreement whereby the landlord and the tenant specify in advance what each will furnish and also agree upon the division of the profits.

J. Establishing Pasture Rental Rates

1. Landowner's cost.
2. Livestock owner's earnings.
3. Alternative feed--based on price of hay and quality of pasture.
4. Custom or historic rates.

K. Methods of Quoting Pasture Rent

1. Per acre (with stocking rate agreed upon by both parties.)
2. Per head per month or per season (stocking rates established by both parties.)

3. Whole tract--usually a part of a farming operation.

Less often used are:

1. Share of gain.
2. Variable rates.

L. Price Considerations for Fair Pasture Rent.

1. The landowner's cost of producing pasture.
2. The livestock owner's earnings from pasture.
3. Pasture yield.
4. Pasture quality.
5. Location of pasture.
6. Handling facilities, water location, and fencing.
7. Services offered by landowner.

M. Considerations of Crop Share Lease

1. Risks are shared by both parties
2. Sharing of increased production
3. Landlord shares more of the production risks
4. Landowner is likely to be more involved in the management of the farm
5. Who will have the final authority in decision making

N. Provisions of a Good Crop Share Lease

1. Proper fractional sharing of crops
2. Proper sharing of specific inputs
3. Sharing all crops alike
   a. If do not share equal one will want to spend more resources where he will get the greatest return

O. Calculating Fair Crop Share Lease

See page IV-4:7

P. Advantages and Disadvantages of Livestock Share Lease

1. Chance for young farmer with limited capital to gain control of business large enough to provide adequate income.
2. Give tenant a direct outlet for grain or forage produced elsewhere in his operation.
3. Opportunity for older farmer to retire and still keep total business intact.
4. Risks are shared.

Table I-- SUMMARY OF RENTAL CONTRIBUTIONS

Acres 640 Explanation (Crop, tract, whole farm, etc.) Whole farm

Description Wheat farm--landowner

Item of Expense (1)	Estimated Total Value (2)	Estimated Interest Rate (3)	Estimated Annual Cost: Total Annual Use-Value (4)	Estimated Annual Cost: Landlord's Share (5)	Estimated Annual Cost: Tenant's Share (6)
	dollars	percent	dollars	dollars	dollars
I. FIXED EXPENSES					
A. Fixed Investment Expenses:					
1. Land	256,000	6	15,360	15,360	
2. Farm Buildings		NONE			
*3. Mach. & Equip.	34,800	9	3,132		3,132
4. Total Section A	XXX	XXX	18,492	15,360	3,132
B. Fixed Operating Expenses:					
5. Labor					
a. Tenant's (Monthly 625) X (Monthly 8)			5,000		5,000
b. Unpaid Family					
c. Landlord's					
d. Hired (Monthly 500) X (Monthly 2)			1,000		1,000
6. Depreciation					
a. Buildings			NONE		
**b. Mach. & Equip.			5,160		5,160
7. Repairs					
a. Buildings			NONE		
***b. Mach. & Equip.			2,880		2,880
8. Real Estate Taxes			1,920	1,920	
9. Building Insurance			NONE		
10. Machinery Insurance (2% of New Cost)			1,152		1,152
11. Management (2.5% of Investment)			7,270		7,270
12. Total Section B					
13. Total Section I (4 + 12)			42,874	17,280	25,594
Landlord - Tenant % of Total				40	60

* $\frac{\text{New Cost}}{2}$ + Salvage ($90/acre X 640 = $\frac{57,600}{2}$ + 6,000 Salvage)

** New cost - Salvage ÷ 10 Years Life (57,600 - 6,000 ÷ 10 years)

*** Estimated 5% of new cost (See explanation)

5. Complex agreements so may have many differences of opinion.
6. Difficulties in who makes decisions on production methods and other factors.

Q. Cash Lease

Tenant pays the landowner a cash rent per acre or a lump sum for his investment.

R. Advantages of a Cash Lease

1. Tenant has complete management control other than certain provisions set forth by the landowner.
2. Easier to plan and develop the business unit.
3. The decision to participate or not participate in government programs is made by the tenant.
4. Landowner is assured a specific level of income, therefore, has little risk involved.
5. The cash lease is simple with little chance for misunderstanding.

S. Disadvantages of a Cash Lease

1. Fixed cost regardless of a production, i.e., more risk to tenant.
2. Lower income for the landowner in good years.
3. Difficult to determine a fair level of cash rent to both parties.
4. Provides an opportunity to "mine" the land in a short period of time, thus lowering its normal level of productivity.

T. Methods of Establishing Cash Rental Rates

1. Customary sharing of crop production based on estimated annual gross receipts.
2. Maximum amount the tenant can afford to pay by estimating tenant's return above production costs (both fixed and variable). The production costs should also include a charge for labor and management.
3. Estimating the landlord's ownership costs.

V. INSTRUCTIONAL MATERIALS

A. Calculating Leasing Rates, Assignment Sheet #1.

B. Answers to Assignment Sheet #1.

VI. REFERENCES

Modern Agriculture Management, Reston Va: Reston Publishing Co., 1978.

Do It Right the First Time, St. Louis, Mo.: Doane Agricultural Service, Inc., 1973.

Farm Business Management, 2nd ed., New York: The Macmillan Co., 1972.

The Farm Management Handbook, Danville, Ill.: The Interstate Printers and Publishers, Inc., 1972.

"Leasing Kansas Native Pasture" MF-428, Cooperative Extension Service, Kansas State University, Manhattan.

"Kansas Crop-Share or Crop-Share-Cash Farm Lease" MF-426, Cooperative Extension Service, Kansas State University, Manhattan.

"Establishing Kansas Cash Farm Rents" MF-424, Cooperative Extension Service, Kansas State University, Manhattan.

"Kansas Flexible Cash Rents" MF-425, Cooperative Extension Service, Kansas State University, Manhattan.

"Irrigation Lease Development and Testing" MF-429, Cooperative Extension Service, Kansas State University, Manhattan.

"Kansas Laws for Farm Landlords and Tenants" Circular 384, Cooperative Extension Service, Kansas State University, Manhattan.

"Flexible Cash Rent for Cropland" MF-423, Cooperative Extension Service, Kansas State University, Manhattan.

"Crop-Share Leases in Kansas" Bulletin 594, Cooperative Extension Service, Kansas State University, Manhattan.

"Cash Farm Rental Rates in Kansas" Bulletin 594, Cooperative Extension Service, Kansas State University, Manhattan.

ASSIGNMENT SHEET #1 — CALCULATE LEASING RATES

Work each of the following problems concerned with leasing arrangements. When completed return to instructor for his evaluation.

1. Suppose you were a tenant and farming 160 acres of wheat land. The wheat yielded 40 bushels per acre and the selling price is $3.00 at harvest time. What would be the landlord share of the receipts if you were using the crop share arrangement of 1/3 of the yield? The cost of the fertilizer was $25.00 per acre and was split on a 50-50 basis.

2. Suppose you were farming 200 acres of wheat which had a yield of 30 bushels per acre. The wheat at harvest time was selling for $3.00 per bushel. Over the last few years a yield of 38 bushels per acre has been established. The agreement on payment was 1/3 of the fixed product rate. What would be the landlord share using this rate? The only thing the landlord contributed was the land.

ANSWERS TO ASSIGNMENT SHEET

A. Assignment Sheet # 1

1. $2,400.00
2. $7,600.00
3. $2,680.00

FARM MANAGEMENT IV

UNIT 6: HOW MUCH DEBT CAN A FARM CARRY?

I. TERMINAL OBJECTIVE

At the end of this unit, the student should be familiar with guidelines to use when determining how much debt a farm can carry.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Identify the two general classes the borrowing of money for farm business fall into.

B. List and describe four guidelines to consider when estimating the amount of debt which can be repaid from net income.

C. List three items of concern when considering debts to be repaid from gross sales.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide student with information and pamphlet "How Much Debt Can a Farm Carry", Kansas State Unviersity, Farm Management Guide, MF-288.

2. Discuss information.

B. Student:

1. Read pamphlet and be able to work out specific examples.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

Information available in "How Much Debt Can A Farm Carry?" Kansas State University, Farm Management Guide, MF-288, Cooperative Extension Service.

V. INSTRUCTIONAL MATERIALS

VI. REFERENCES

"How Much Debt Can a Farm Carry?" Kansas State University, Farm Management Guide, MF-288.

"Financial Ratios Used in Farm Financial Management" Kansas State University, Farm Management Guide, MF-270.

"Balance Sheet-A Farm Financial Management Tool" Kansas State University, Farm Management Guide, MF-291.

Farm Management-Principles, Budgets, Plans, Champaign, Illinois: Stripes Publishing Co.

The Farm Management Handbook, Danville, Illinois: Interstate Printers and Publishers Inc.

FARM MANAGEMENT IV

UNIT 7: MANAGEMENT SERVICES

I. TERMINAL OBJECTIVE

At the end of this unit the student should be familiar with the use of electronic data processing systems in farm record keeping and planning. He will have a knowledge of the systems available and some guidelines to follow when selecting a system.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Describe what electronic data processing systems are.

B. Explain why the use of EDP is not a cure all for poor records or a guarantee that you will have good records.

C. Name the major advantage of using a computer for records.

D. Identify the types of EDP programs available and some advantages of each type.

E. Name three types of groups which offer EDP services to farmers.

F. Name four types of financial output reports commonly available from EDP programs.

G. List three guidelines to use when selecting a EDP program.

H. Discuss the different EDP programs available and where to find them.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide students with publications on EDP package available from various sources -- Kansas Cooperative Extension Service, PCA Private Firms.

2. Discuss information.

B. Student:

1. Research available EDP packages - select one which you would be comfortable with.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Electronic Data Processing (EDP)

A system of processing and accounting records on an electronic computer.

B. Good Records are a Must for EDP Programs

As with any computer program the output information is only as good as the information that goes into the machine. (i.e. Garbage in = Garbage out). Electronic data processing subscribers still have the responsibility of recording the information accurately and regularly.

C. Advantages of Using a Computer in Record Keeping.

1. Tremendous timesaver.
2. Once information is in the machine accurately, an unlimited number of reports and summaries can be produced.

D. EDP Record Keeping Programs Available

1. Year End Summary.

A farmer keeps his records at the farm and posts transactions throughout the year. Usually no code system is used. Disadvantage is the fact the summary is only produced once a year.

2. Coded Check Programs.

This uses specially printed checks and deposit slips that allow for entering a code number to identify the purchase or receipt. Basically, a cash-flow program cannot accomodate accrual record keeping without supplemental reporting of inventories and other noncheckbook type transactions. It is simple and easy to use.

3. Mail-in Programs

The subscriber records each transaction with the appropriate identification code number. At the end of the month, quarter, or year, the subscriber mails in carbon copy of recorded transaction. This offers more flexibility in the type and amount of information. Personal assistance is usually not readily available.

4. Computerized Depreciation Schedule

This is used to maintain and update depreciation schedules.

5. Family Living Packages

Provides family income and expense summaries. May be part of coded check or mail in program. Gives account of farm income being transferred to the family for food, clothing, etc.

6. Specialized Programs

Dairy Herd Improvement Association and feedlot performance records would be an example of specialized record keeping and planning packages.

E. Groups Offering EDP Services.

1. Universities

2. Banks

   Many banks are too small to undertake their own program so will purchase a franchise in a larger bank.

3. Farm Service Organization

   Farm Bureau and Production Credit Association would be examples of farm service organizations.

4. Farm Business Association.

5. Private Firms.

F. Financial Output Reports

1. Cash flow and cash flow performance.
2. Depreciation schedule.
3. Income statement.
4. Net worth statement.
5. Farm Business Analysis Reports.
6. Enterprise Analysis reports.
7. Historical summary.

G. Guidelines for Selecting an EDP System

1. First step is to determine your information needs. Depend upon factors such as: size, type, and complexity of your farm operations, your age, eductional background, training and experience in record keeping, available time, and how the information will be used.
2. Evaluate the type of accounting method which will be needed.
3. External services available - type and kind.
4. Operations procedures - extremely important that the code system, recording procedures, output reports, and assistance available.

H. Programs Available

1. K-Mar 105, Kansas State University Extension Service.
2. Telenomics, Kansas State University Extension Service.
3. Farm Management Association.
4. Agrifax - PCA.
5. Farm Bureau.
6. International Harvester.
7. Cost Finder Reports, Oklahoma State University.

V. INSTRUCTIONAL MATERIALS

VI. REFERENCES

Farm Accounting and Business Analysis, Iowa State University Press, Ames, Iowa, 1974.

"K-Mar 105 Electronic Management System" Cooperative Extension Service, Kansas State University, Manhattan.

FARM MANAGEMENT IV

UNIT 8: MACHINERY MANAGEMENT

PROBLEM AREA 1: INTRODUCTION

I. TERMINAL OBJECTIVES

At the end of this unit, the student should be able to undertand the need for machinery management and be able to assess the different factors which go into machinery management.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Compare the investment per acre in machinery as to other investments.

B. Describe some factors to consider when dealing with machinery management.

C. Explain why machinery management is becoming increasingly important.

D. List and describe five ways you can become prepared for the increasing need for machinery management.

E. Explain the machinery manager's goal when buying farm machinery.

F. Describe the two alternatives available when deciding to buy machinery.

II. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide student with objective sheet.
2. Discuss objectives and information.

B. Student:

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Machinery costs are usually the largest outlay of capital except for land purchase.

$60.00 to $80.00 per acre are not uncommon with investments of over $100.00.

B. Factors to Consider:

1. How much equipment should be owned.
2. What size equipment is needed.
3. How often should machinery be traded.

4. Should a custom operator be hired or machine be leased.

C. Machinery management is becoming increasingly important.
   1. Continued increase is cost of machinery.
   2. Larger farms require larger more expensive machinery.

D. Ways to become prepared for machinery management:
   1. Know management principles.
   2. Keep record of workdays used and needed.
   3. Know how to accurately estimate costs.
   4. Know how to improve equipment reliability.
   5. Know how to improve field efficiencies.
   6. Develop long range plans for farming operations.
   7. Work on ways to improve ownership and management.

E. Machinery manager's goal when buying

   Buy correct size to insure that field work is done on time without overinvestment in machinery.

F. Alternatives available to ownership
   1. Custom lease.
   2. Lease.
   3. Joint ownership.

V. INSTRUCTIONAL MATERIAL

VI. REFERENCES

Machinery Management, FMO.

Farm Power and Machinery Management, Iowa State Press, Ames, Iowa.

Farm Machinery and Equipment, McGraw-Hill, New York.

Kansas Core IV, "Machinery and Equipment Management".

FARM MANAGEMENT IV

UNIT 8: MACHINERY MANAGEMENT

PROBLEM AREA 2: ESTIMATING COSTS

I. TERMINAL OBJECTIVES

At the end of this unit, the student should be able to distinguish between different types of costs and what they include. He should also be able to compute these costs using tables, formulas and alignment charts.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Match the kinds of costs involved in owning and operating any piece of machinery to the correct term.

B. Describe three types of operating costs.

C. Describe the factors which influence the fixed costs.

D. List five types of fixed costs.

E. Identify the three factors included in depreciation.

F. Demonstrate the ability to figure depreciation using the straight line method.

G. Assess the reasons for using the different types of depreciation methods.

H. Estimate fixed costs for a given machine given the percentage value of the machine.

I. Determine the average fixed costs given the information.

J. Select a machine on the basis of average fixed costs.

K. Estimate annual fixed costs of machinery using an alignment chart.

L. List the figure that fuel and lubricant costs will generally represent.

M. Evaluate different types of fuels in considering fuel needs.

N. Determine the average fuel consumption for a tractor given the needed information.

O. List the rule of thumb in computing lubricant costs from fuel costs.

P. Estimate the fuel and lubricant costs using an alignment chart.

Q. List and describe five fuel saving tips.

R. List and describe five main types of repairs.

S. Apply the rules for determining lost time costs.

T. State the rule of thumb concerning down time.

U. Match the type of machine with the expected mechanical life hours of each.

V. Compute the estimated repair cost given the needed information.

W. Estimate the operating cost of machinery using an alignment chart.

X. Estimate individual machine costs using machine cost tables.

Y. Estimate total tractor machine costs from matching cost tables and operating costs.

Z. Estimate total combine machine costs from machine cost tables and operating costs.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide student with objectives and assignment sheets.
2. Provide student with Farm Management Guide, MF-273.
3. Discuss objectives.
4. Discuss information and assignment sheets.

B. Student:

1. Complete assignment sheets.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

(NOTE: Information is available in "Machinery Management," John Deere, Chapters 6 - 9.)

A. Fixed Costs Depend on How Long Machine is Owned and Not on How Much It is Used

1. Depreciation
2. Taxes
3. Insurance
4. Shelter
5. Interest

B. Operating Costs Vary with Amount the Machine is Used

1. Fuel
2. Lubrication
3. Labor
4. Repairs
5. Maintenance

C. Depreciation

1. Age

2. Wear and tear
3. Obsolescence

D. Selecting a depreciation method should be based on the actual depreciation of the machine.

E. Remaining value as a percentage of list price. (Information on page 62 of "Machinery Management," FMO, John Deere, Moline, Illinois.)

F. Estimating Annual Fixed Cost by Using an Alignment Chart

1. Determine average annual fixed cost percent by using chart #1.
2. Draw a straight line from indicated mark on left margin to the predetermined annual fixed cost percent.
3. Draw a second line from the initial list price and the point of intersection of the first line and the turning line.
4. The second line will then intersect the bottom scale to show the average annual fixed cost.

G. Fuel and lubricants generally represent 20 percent of total costs.

H. Lubricant costs are usually about 15% of fuel costs.

I. Determing Fuel Consumption and Costs

Information and charts available in "Machinery Management", FMO, John Deere, Moline, Illinois, Chapter 7.

J. Types of Repairs

1. Routine wear
2. Routine overhauls
3. Accidental breakage or damage
4. Repairs due to operator neglect

K. Determining Repair Costs

Information is available in "Machinery Management", FMO, John Deere, Moline, Illinois, Chapter 8.

L. Estimating Total Costs for Machines and Operations

Information and charts are available in "Machinery Management", FMO, John Deere, Moline, Illinois, Chapter 9 and Appendix.

V. INSTRUCTIONAL MATERIALS

A. Alignment Chart for Estimating Operating Costs.
B. Annual Average Fixed Cost as a Percent of Initial List Price.
C. Alignment Chart for Estimating Annual Fixed Cost.
D. Estimating the Operating Cost of Machinery, Assignment Sheet #1.

E. Estimating Annual Fixed Cost of Machinery, Assignment Sheet #2.

F. Answers to Assignment Sheets.

(NOTE: Additional material is available in "Machinery Management" Instructor's Kit, John Deere, Moline, Illinois.)

VI. REFERENCES

Machinery Management, FMO.

Farm Machinery and Equipment, McGraw-Hill, New York.

Farm Power and Machinery Management, Iowa State Press, Ames, Iowa.

Modern Concepts of Farm Machinery Management, Oklahoma State University.

Machines for Power Farming, Wiley and Sons, New York.

Doane's Farm Management Guide, St. Louis, Missouri.

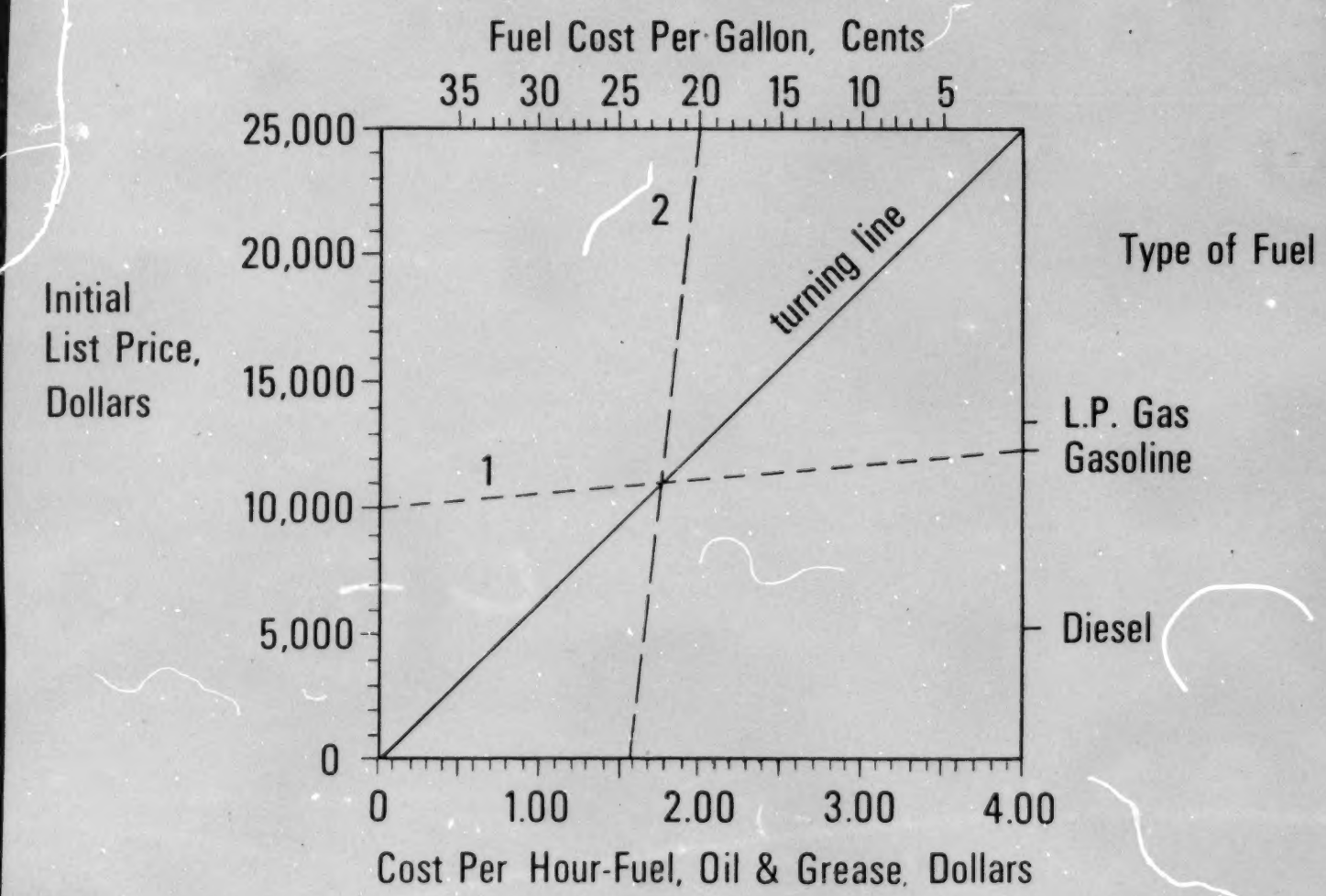
Farm Mechanics, Interstate, Danville, Illinois.

"A Look at Machinery Costs", Kansas State University Farm Management Guide, MF-273.

Kansas Core IV, "Machinery and Equipment Management".

Alignment Chart for Estimating Operating Cost

TRACTORS, COMBINES, BALERS, FORAGE HARVESTERS, SWATHERS



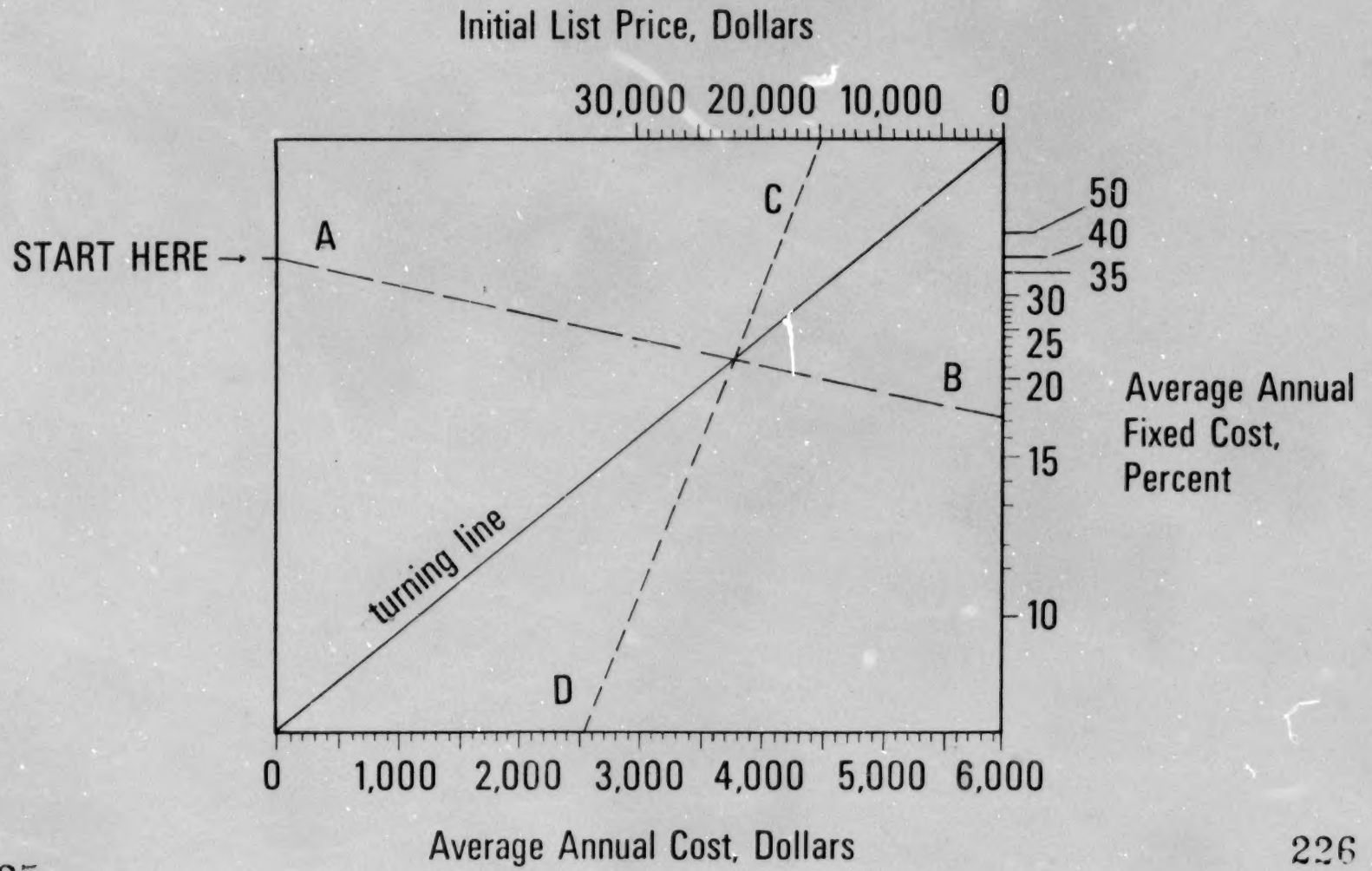
Annual Average Fixed Cost

As A Percent of Initial List Price

Number of Years Owned Since New	All Tractors	Combines	Forage Harvesters & Balers	Swathers	All Others
1	32.8	37.3	43.1	36.3	40.3
2	22.1	24.5	26.8	24.4	25.8
3	18.3	19.8	21.0	20.0	20.5
4	16.1	17.1	17.8	17.4	17.6
5	14.7	15.4	15.7	15.6	15.6
6	13.6	14.1	14.1	14.3	14.2
7	12.8	13.0	12.9	13.2	13.0
8	12.0	12.1	12.0	12.3	12.1
9	11.4	11.4	11.1	11.5	11.3
10	10.9	10.7	10.4	10.8	10.6
11	10.4	10.1	9.8	10.2	9.9
12	10.0	9.6	9.2	9.6	9.4

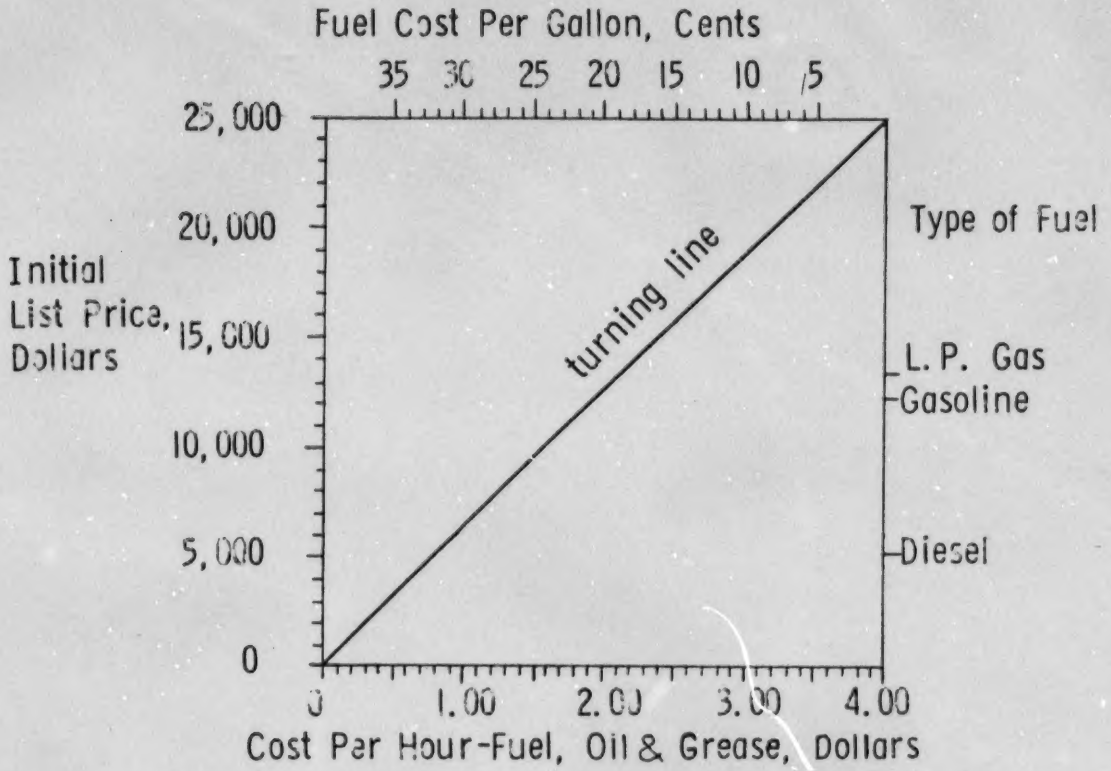
*Includes depreciation, taxes, housing, insurance, and interest. It is further assumed that the machine was sold at 10% less than initial list price and a credit for depreciation is given for income tax purposes.

Alignment Chart for Estimating Annual Fixed Cost



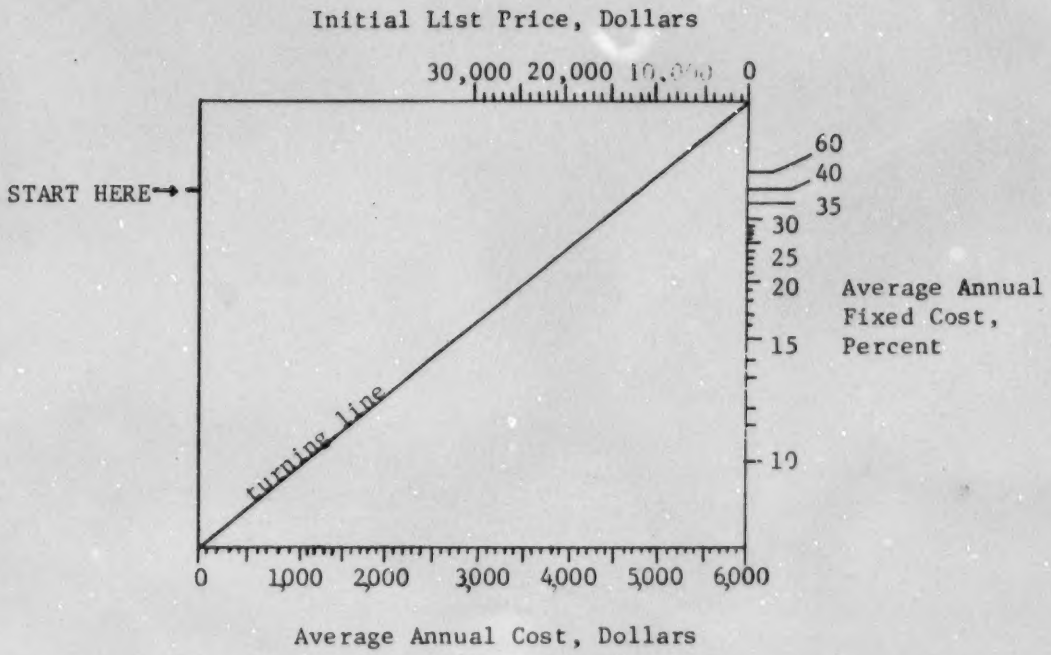
ASSIGNMENT SHEET #1--ESTIMATING THE
OPERATING COST OF MACHINERY

Using the alignment chart below, work each of the following problems



ASSIGNMENT SHEET #2--ESTIMATING ANNUAL
FIXED COST OF MACHINERY

Using the alignment chart below, work each of the following problems



ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. $1.60
2. $ .95
3. $ .80
4. To be completed by the student

Assignment Sheet #2

1. $1,300
2. $ 800
3. $3,100
4. To be completed by the student

FARM MANAGEMENT IV

UNIT 8: MACHINERY MANAGEMENT

PROBLEM AREA 3: SELECTION OF EQUIPMENT

I. TERMINAL OBJECTIVES

At the end of this unit, the student should be able to select from a list the advantages of owning, leasing, renting, and custom hiring. He should be able to decide when to trade and be able to determine what size of machinery he needs. He should also be able to determine custom rates and the number of acres a machine must be used to break even with the present custom rates.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Name the factors to consider when selecting machinery and equipment.

B. List the procedure to follow when solving most machinery problems.

C. List and explain four guidelines to follow when considering trading.

D. Match the suggested obsolescence life for tractors, combines, planters, and tillage tools.

E. Demonstrate ability to use an average machine wear out and least cost table.

F. Describe a logical approach to follow in determining how large a tractor is needed.

G. Determine machine size and tractor size given the needed information.

H. Select tractors on the basis of relative costs.

I. List and explain three important considerations when selecting machinery.

J. Explain why timeliness is important to a farm operator.

K. Estimate the field loss of a given crop using an alignment chart.

L. Determine the best machine to select on the basis of alternative cost.

M. List two important considerations to keep in mind when buying a tractor.

N. List three factors to consider when buying a machine.

O. Select from a list the advantages and disadvantages of custom service.

P. Apply the formula for calculating the number of acres per year to justify ownership.

Q. Apply the rule for determining the annual fixed cost.

R. Apply the rule for determining fuel cost per acre.

S. Apply the rule for determining repair cost per acre.

T. Apply the rule for determining labor costs per acre.

U. List four variables in establishing rates for custom work.

V. Determine custom work rates when given a custom work rate table.

W. Determine if it is cheaper to own a mahcine or hire the custom operator.

X. Determine the number of acres a machine must be used to break even with the present custom rates.

Y. Determine if it is cheaper to own a machine or to lease it.

Z. List factors when leasing is usually of greatest benefit.

AA. List situations when renting agricultural machinery is beneficial.

BB. List situations when owning is the best alternative.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide student with objectives and assignment sheets.
2. Provide students with Farm Management Guides, MF-253, MF-254, MF-265, MF-274.
3. Discuss objectives.
4. Discuss information and assignment sheets.
5. Have students complete assignment sheets.

B. Students:

1. Complete assignment sheets.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

(NOTE: Supplemental information can be found in "Machinery Management", FMO, John Deere, Moline, Illinois, Chapters 10, 11, 12, & 13.)

A. Factors to Consider when Selecting Machinery and Equipment

1. Reliability of manufactures.
2. Parts and service available from dealer.
3. Adaption of machine to needs.

   (NOTE: Consider size, attachments, and simplicity of design.)
4. Price and quality of machine.
5. Availability of fuel used on engine driven machines.
6. Ease of making adjustments and minor repairs.
7. Design and neatness of appearance.
8. Added investment should be offset by reducing the required labor or permitting the labor to be used more productively.
9. Resale or salvage value.

B. Procedure to Follow when Solving Machinery Problems

1. Accurately estimate total working time that is available for major field operations.
2. Determine effective field capacity of machines.
3. Match power units to machines.
4. Predict costs accurately for any machine application.

C. Trading Guidelines

1. Accumulated average cost per unit of use has reached its lowest point and is increasing.
2. The machine is obsolete.
3. The machine has lost its reliability.
4. The machine is worn out.
5. Increase in the size of an operation makes a machine too small for timely operations.

D. Obsolescence Life, Wear Out, and Least Cost Table.

Information on page 110 of "Machinery Management", John Deere, Moline, Illinois.

E. Selecting Tractor Size

1. Provide enough power to get all important operations completed on time.
2. Provide for sufficient annual use so costs will be minimized.

F. Factors that Determine the Size of Equipment to Buy

1. Size and type of farming operation.
2. Soil type and topography.
3. Labor available.
4. Capital available.
5. Skill of the operator.
6. Number of days in the season available to use this machine.

G. Selecting Machinery

1. Select proper size for the power unit.
2. Get sufficient capacity to get needed work done within the allotted time period.
3. Make a decision which results in maximum net profit.

H. Determining Machine Size

Information is available in "Machinery Management", FMO, John Deere, Moline, Illinois, Chapter 11.

I. Advantages and Disadvantages of Custom Service

1. Advantages

a. Ownership costs are eliminated (Example - taxes, shelter costs, maintenance labor and tech. skill, insurance.)

b. Capital can be invested in other enterprises.

c. Annual machinery cost can be varied to suit weather, yield, and market conditions of individual years.

d. There may be benefits from newer machinery, a skilled operator, and less time required.

2. Disadvantages

a. Service may not be available when the job is ready.

b. Annual cost may be higher than ownership cost.

c. Labor released by hiring custom work may not be profitably used.

d. Custom operators may prefer large jobs and refuse or postpone small jobs.

e. Custom operators are sometimes interested in acres rather than efficiency.

Example: Operators often operate combine or swather too fast.

f. May influence decision as to potential rental of land.

J. Rule for determining the Annual Average Fixed Cost

1. List price times percent factor listed in chart below equals annual fixed cost.

ALIGNMENT CHART FOR ESTIMATING ANNUAL FIXED COST
AS A PERCENT OF INITIAL LIST PRICE

Number of Years Owned Since New	All Tractors	Combines	Forage Harvesters & Balers	Swathers	All Others
1	32.8	37.3	43.1	36.3	40.3
2	22.1	24.5	26.8	24.4	25.8
3	18.3	19.8	21.0	20.0	20.5
4	16.1	17.1	17.8	17.4	17.6
5	14.7	15.4	15.7	15.6	15.6
6	13.6	14.1	14.1	14.3	14.2
7	12.8	13.0	12.9	13.2	13.0
8	12.0	12.1	12.0	12.3	12.1
9	11.4	11.4	11.1	11.5	11.3
10	10.9	10.7	10.4	10.8	10.6
11	10.4	10.1	9.8	10.2	9.9
12	10.0	9.6	9.2	9.6	9.4

*Includes depreciation, taxes, housing, insurance and interest. It is further assumed that the machine was sold at 10% less then initial list price and a credit for depreciation is given for income tax purposes.

Example: A combine with an initial list price of $10,000.00 that has been owned five years since new would have an annual fixed cost of 15.4% x $10,000 or $1,540.00

2. $\frac{\text{Annual ownership or fixed cost}}{\text{Acres of annual use}}$ = Ownership cost per acre

K. Rule for Determining Fuel and Lubricant Cost

1. $\frac{\text{Initial list price}}{1000}$ X fuel price X fuel factor = fuel cost per hour

2. Fuel and lubricant cost factors*

Equipment	Fuel Cost Multiplier		
	Gasoline	Diesel	L.P.G.
Two-wheel drive tractors	.79	.51	.87
Self-propelled combines	.79	.51	.87
Self-propelled swathers	.79	.51	.87
Hay baler with engine	.79	.51	.87
Forage harvester with engine	.79	.51	.87
Self-propelled cotton picker	.26	.18	.31
Trucks and pickups	1.15	.74	1.25
Four-wheel drive tractors	.53	.36	.61
Self-propelled forage harvesters	.53	.36	.61
Crawler tractors	.41	.29	.48
Feed truck with power box	.41	.29	.48

(NOTE: *These values are 15% larger than the fuel consumption multiplier. This allows for 15% of the fuel cost to cover the cost of lubricants and filters. Multiply these rates by the fuel price and the list price divided by $1,000 to obtain fuel and lubricant cost in dollars per hour. Fuel price is the actual cost per gallon after tax refunds and all rebates.)

3. $\frac{\text{Fuel cost per hour}}{\text{Acres per hour}}$ = Fuel cost per acre

L. Rule for Determining Repair Cost

1. $\frac{\text{Initial list price}}{1,000}$ X Accumulated repair cost/$1000 of initial list price = Total Accumulated Repair Cost

2. Accumulated repair cost per $1000 of initial list price

M. Calculating the Number of Acres Per Year to Justify Machine Ownership

$$\text{Acres} = \frac{\text{Average Annual Fixed Costs}}{\text{Custom Rate - Operating Cost Per Acre}}$$

N. Variables in Establishing Custom Work Charges

1. Size of the field.
2. Travel distance from home base or last job.
3. Difficulties due to crop or field conditions.
4. Labor costs.
5. Profit and risk margins.

O. Determining Custom Rates

Information can be found in "Machinery Management", John Deere, Moline, Illinois and Kansas State University Farm Management Guides, MF-253 and MF-254.

P. Leasing is Greatest Benefit

1. Short on capital.
2. Short term opportunity investment occurs that will yield a greater return than purchasing.
3. Rate of return is considerably higher than interest rates on borrowed capital.
4. The future is uncertain.
5. Uncertain as to what size or model is needed.

Q. Ownership Benefits

1. Capital is not limiting and operation is constant. Owning will usually give a cost benefit.
2. Income tax benefit.

R. Renting is Best Alternative

1. Low annual use in specialized operations.
2. Help complete important operations on time.

S. Determining Best Alternatives

Information can be found in "Machinery Management", FMO, John Deere, Moline, Illinois, Chapter 13.

V. INSTRUCTIONAL MATERIALS

Materials can be found in "Machinery Management" Instructor's Kit, John Deere, Moline, Illinois.

VI. REFERENCES

Machinery Management, FMO, John Deere.

Farm Machinery and Equipment, McGraw-Hill, New York.

Farm Power and Machinery Management, Iowa State Press, Ames Iowa.

Modern Concepts of Farm Machinery Management, Oklahoma State University.

Machines for Power Farming, Wiley and Sons, New York.

Doane's Farm Management Guide, St. Louis, Missouri.

Farm Mechanics, Interstate, Danville, Illinois.

Farm Management Guides, MF-253, MF-254, MF-256, MF-265, MF-273, MF-274, Kansas State University Extension Service, Kansas State University, Manhattan.

Kansas Core IV, "Machinery and Equipment Management" and "Machinery and Equipment Management - Custom Service Versus Ownership".

FARM MANAGEMENT IV

UNIT 8: MACHINERY MANAGEMENT

PROBLEM AREA 4: ECONOMIC PERFORMANCE

I. TERMINAL OBJECTIVES

At the end of this unit, the student should be able to determine machine capacity and field efficiency for a given field operation. He should also be able to match the size of implements used with power requirements needed.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. List the three components of economic performance.

B. List the three factors which determine capacity of a machine.

C. Demonstrate how to determine speed in the field.

D. Apply the rule for determining the theoretical capacity of a machine.

E. Describe the difference between theoretical capacity and effective field capacity.

F. Apply the rule for estimating the required effective field capacity for a machine to perform a specific operation.

G. List and describe factors which affect field efficiency.

H. List and describe four factors to consider in improving field efficiency.

I. Match the type of field operation with the typical field efficiency.

J. Select from a list the factors that determine the size of equipment to buy.

K. Describe two reasons why machine size is important to machinery management.

L. Determine the required capacity of a machine using an alignment chart.

M. Estimate the effective machine capacity using an alignment chart.

N. List and describe four factors to consider when selecting a power unit.

O. Name the three forms of power that is converted from an engine.

P. List and describe the factors which go into computing horsepower.

Q. Determine how fast an implement can be pulled with a given size tractor using the formula or alignment chart.

R. Determine how large an implement can be pulled using an alignment chart.

S. Estimate the horsepower requirement given the resistance and width of equipment.

T. Identify where horsepower figures for given tractors can be found.

U. Demonstrate how to use the Nebraska Tractor Test.

V. List and describe three important factors to consider when matching

tractors and implements.

W. Determine the PTO horespower requirement needed given the type of implement and soil type.

X. Determine the horsepower requirement according to the amount of work time available.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide students with objective and assignment sheets.
2. Provide students with Farm Management Guide, MF-256 "Determining Field Capacity of Farm Machinery," "Avoiding Machinery Bottlenecks," and "Getting the Most From Your Tractor" Cooperative Extension Service, Kansas State University.
3. Discuss objectives.
4. Discuss information and assignment sheets.

B. Student:

1. Complete assignment sheets.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

(NOTE: Information available in "Machinery Management" FMO, John Deere, Chapters 2, 3, 4, and 5

A. Components of Economic Performance

1. Machine performance
2. Field efficiencies
3. Power performance
   a. available horsepower
   b. fitting implements with power available
   c. fuel consumption
4. Labor performance
   a. amount of labor
   b. value of labor
   c. kind of labor

B. Determining Field Capacity

1. Speed of travel
2. Width
3. Efficiency

C. Determine Speed Miles Per Hour

$$\text{Speed (MPH)} = \frac{\text{Distance traveled (feet)}}{\text{time (minutes)} \times 88}$$

D. Rule for Determining Theoretical Capacity

$$\text{Theoretical Capacity (acres per hour)} = \frac{\text{Speed (mph)} \times \text{Width (feet)}}{8.25}$$

E. Rule for Determining Effective Field Capacity

$$\text{Effective Field Capacity} = \frac{\text{Speed (mph)} \times \text{Width (feet)}}{8.25} \times \frac{\text{Field Efficiency}}{100}$$

(NOTE: Difference between theorectical capacity and effective field capacity is field efficiency)

F. Determining Required Effective Field Capacity

1. Determine total number of acres
2. Determine total number of hours available to do the job
3. Determine acres per hour -- $\frac{\text{Total acres}}{\text{Total hours}}$ this is effective field capacity.

G. Factors Affecting Field Capacity

1. Using partial capacity
2. Filling procedures
3. Unloading procedures
4. Making adjustments
5. Servicing machines
6. Having unmatched machines
7. Turning and field conditions

H. General Rules that Affect Field Efficiency

1. A normal turn at end of row should be made with one continuous motion.

(NOTE: The time to make a turn with a row crop operation depends mainly on the width of the available turning space and the ground surface conditions.)

2. When space at the end is too narrow for a complete turn and requires backing for completion, as much as 50 percent more time will be required.
3. If there is no space at the end for a turn and the entire operation must be completed by backing, turning time may be two and one-fourth times that of a normal turn.
4. Other increases include 11 percent for a rough field condition, 29 percent for obstructions and 25 percent for ditches.
5. Operators can increase field efficiencies by 10 percent or more by simply trying to eliminate unnecessary time the implement is down at the end of a furrow or row.

I. Typical Field Efficiencies

OPERATION	FIELD EFFICIENCIES
1. Tillage (plowing, discing, and cultivating)	65-85%
2. Planting	45-75%
3. Drilling	65-80%
4. Combining, cotton stripping, baling	60-75%
5. Mowing, raking, conditioning, and swathing	65-85%
6. Spraying	55-65%

J. Factors that Determine the Size of Equipment to Buy

1. Size and type of farming operation
2. Soil type and topography
3. Labor available
4. Capital available
5. Skill of the operator
6. Number of days in the season available to use this machine

K. Reasons Why Machine Size is Important

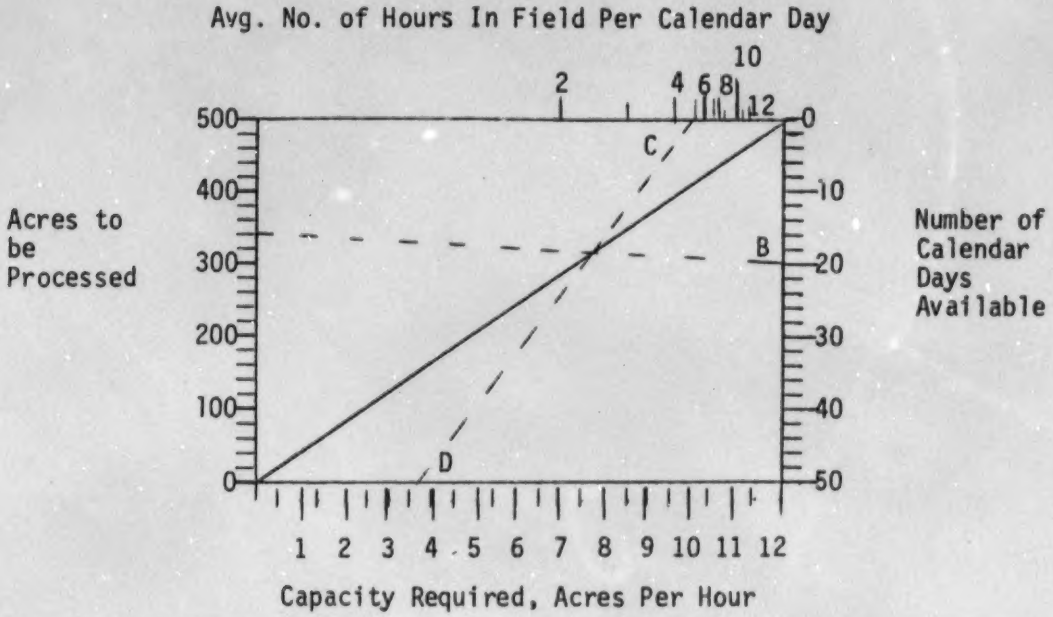
1. Right size for amount of work to be done
2. Proper capacity to match other related equipment

L. Determining the Required Capacity of a Machine Using an Alignment Chart

1. In order to determine the required capacity of a machine use the enclosed chart.
2. Draw a straight line from the number of acres to be processed to the number of calendar days in which the process must be completed.
3. Draw a second line from the average number of working hours available per calendar day and the point of intersection of the first line and the turning line.
4. The second line will then intersect the bottom scale to show the required effective capacity in acres per hour.

Example: 340 acres of land is to be prepared for wheat seeding and it is desired to use the smallest size of one-way plow that can be used if the ground is to be worked between the dates of September 1 and September 20; during the 20 days no more than 100 hours is available for working in the field, due to Sundays and bad weather. This is an average of 5 hours in the field for each calendar day. The required capacity as shown on the chart is approximately 3.5 acres per hour.

CHART FOR ESTIMATING PROPER MACHINERY CAPACITY



M. Estimating the Capacity of a Machine by Using an Alignment Chart

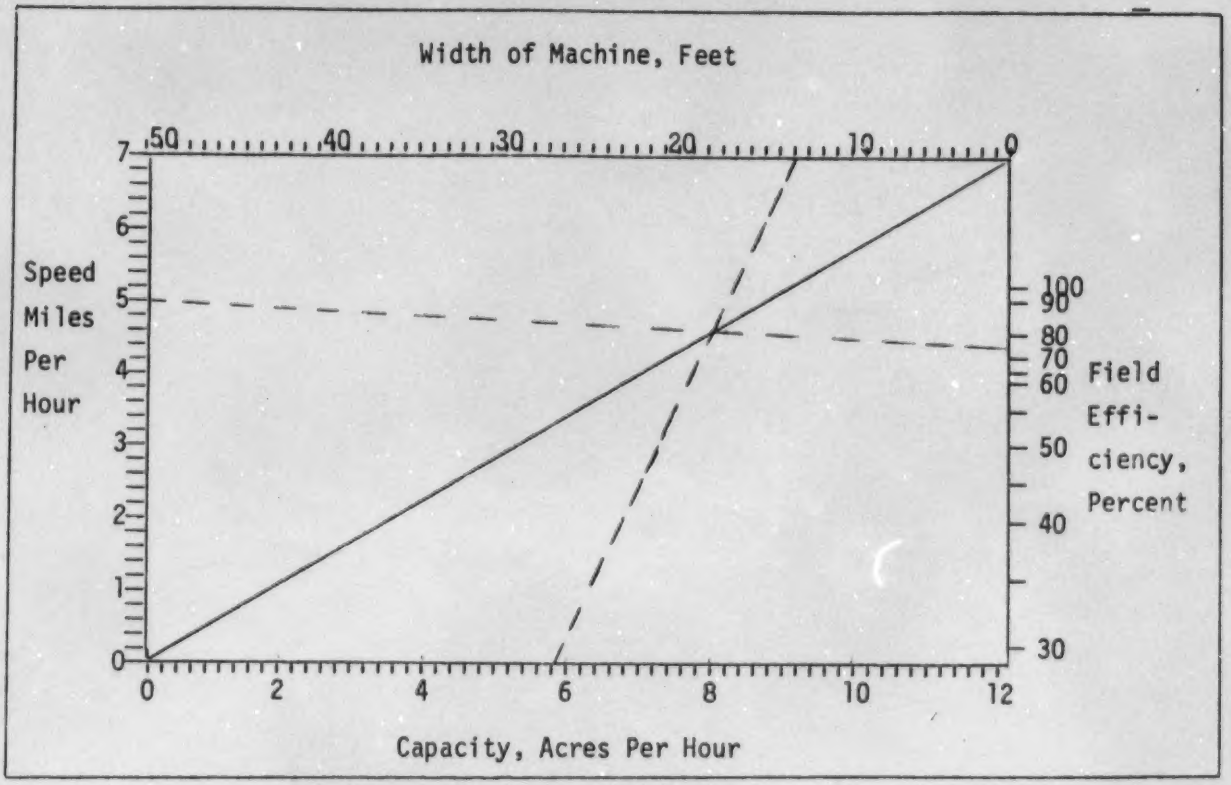
1. Use the chart enclosed.
2. Draw a straight line from the speed of machine to the correct field efficiency percent.

(NOTE: Field efficiency data is included in earlier information within this unit.)

3. Draw a second line from the machine width through the point of intersection of the first line and the turning line.
4. Second line will then intersect the bottom scale to show the estimated capacity of the machine.
5. If proper width needs to be determined in order to reach a given capacity, use the same alignment chart and the following steps:
   a. Draw straight lines from the speed of travel to the correct field efficiency.
   b. Draw a second line from the desired capacity (acres per hour) through the point of intersection of the first line and the turning line.
   c. The second line will then intersect the top scale to show the needed width.

Example: A machine traveling 5 mph with a 75 percent field efficiency and a needed capacity of 5.5 acres per hour would have to be how wide? By using the chart enclosed it can be determined that the machine needs to be 12 feet wide .

ALIGNMENT CHART FOR ESTIMATING MACHINE CAPACITY



N. Factors to Consider when Selecting Power Units

1. Engine type
2. Horsepower rating
3. Soil resistance to machine
4. Tractor Size
5. Matching implements
6. Size for critical work

O. Power Converted from Engine

1. Drawbar
2. PTO
3. Hydraulic

P. Horsepower - - Measure of the Rate at which Work is Done.

$$\text{Horsepower} = \frac{\text{Force (pounds)} \times \text{Speed (mph)}}{375}$$

Q. Find Horsepower Figures

1. Manufacturer
2. Dynamometer
3. Nebraska Tractor Test

R. Estimating Horsepower Requirements Using an Alignment Chart

Recommended source for this information can be found in "Machinery Management" FMO, John Deere, Moline, Illinois, Chapter 5.

S. Nebraska Tractor Test

Information is available in "Tractors", FMO, John Deere, Moline, Illinois, pg. 292-294.

T. Matching Tractors and Implements

1. Tractors must not be overloaded or early failure of componenets will occur.
2. The implement must be pulled at the proper speed or optimum performance cannot be obtained.
3. The soil conditions and their effect on machine performance must be considered.

U. Determining Horsepower Based on Soil Conditions

Chart available in "Machine Management" FMO, John Deere, Moline, Illinois, pg. 49.

V. INSTRUCTIONAL MATERIALS

A. "Alignment Chart for Estimating Proper Machine Capacity, Average Number of Hours in Field."

B. "Alignment Chart for Estimating Machine Capacity, Width of Machine."

C. Determining the Preferred Capacity of a Machine, Assignment Sheet #1.

D. Estimating the Machine Capacity, Assignment Sheet #2.

E. Answers to Assignment Sheets.

VI. REFERENCES

Machinery Management, FMO.

Farm Machinery and Equipment, McGraw Hill, New York.

Farm Power and Machinery Management, Iowa State Press, Ames, Iowa.

Doane's Farm Management Guide, St. Louis, Missouri.

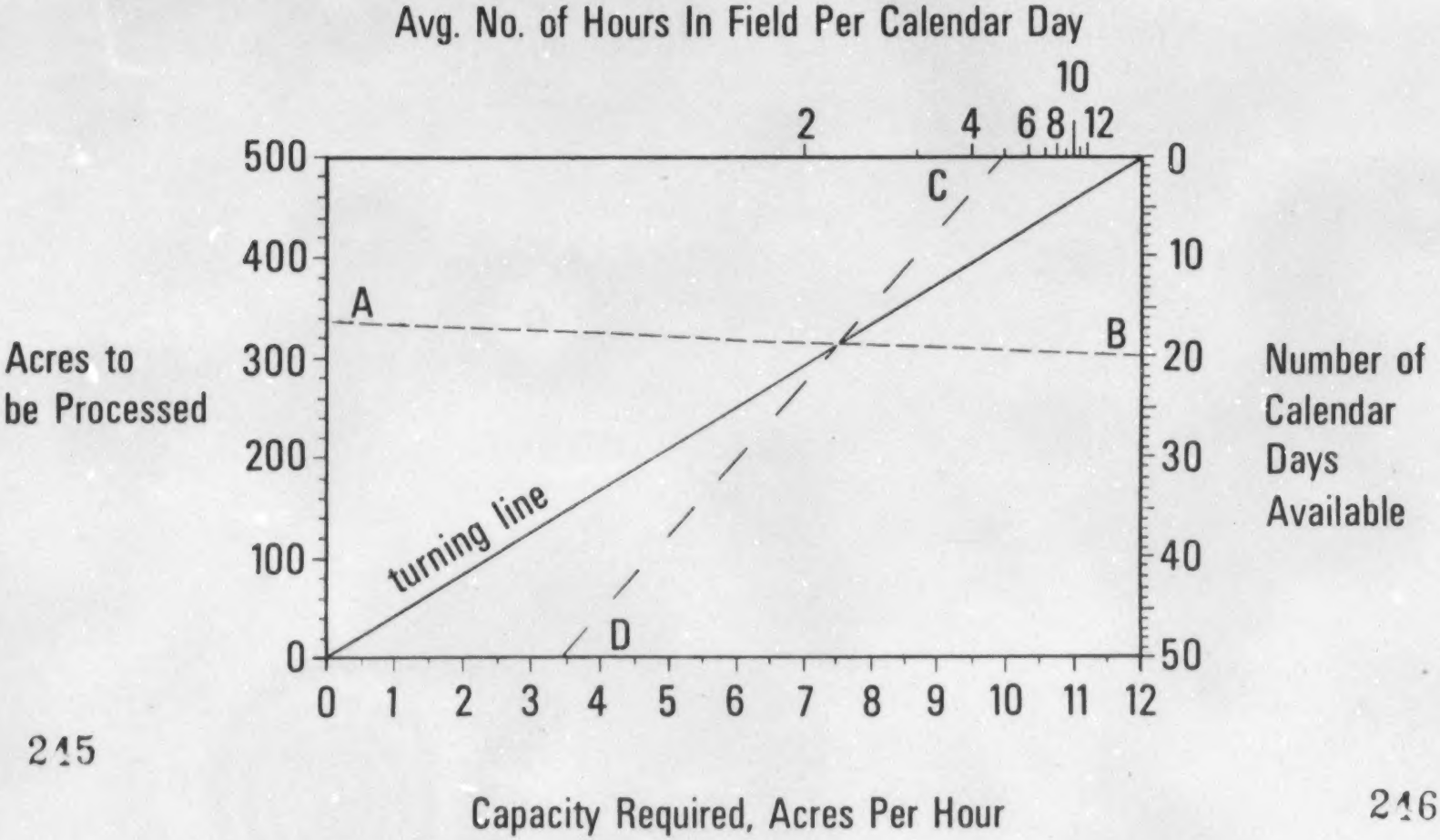
Modern Concepts of Farm Machinery Management, Oklahoma State University.

Machines for Power Farming, Wiley and Sons, New York.

"Determining Field Capacity of Farm Machinery, Kansas State University Farm Management Guide, MF-256.

Kansas Core IV, "Machinery and Equipment Management."

Alignment Chart for Estimating Proper Machine Capacity



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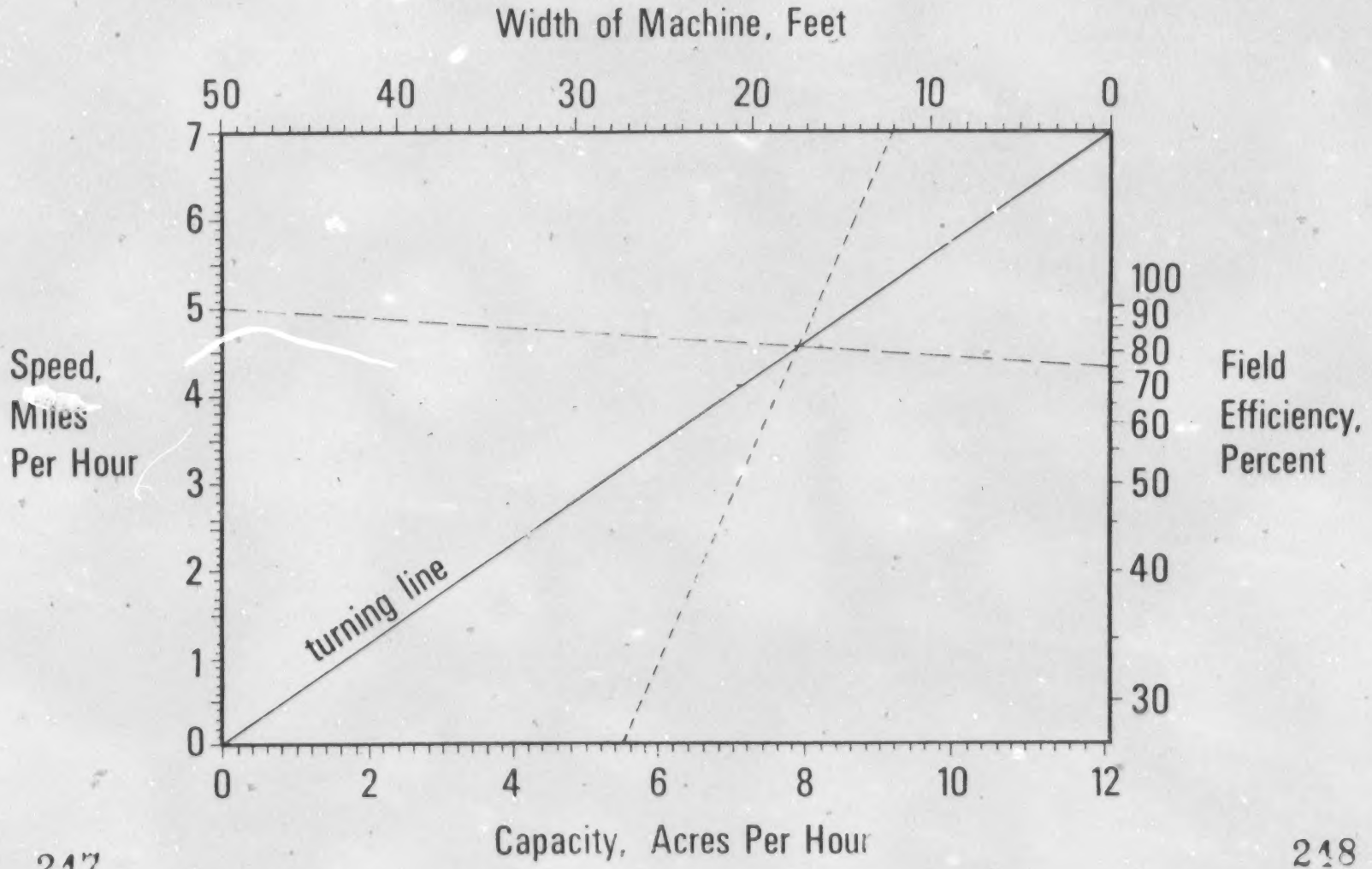
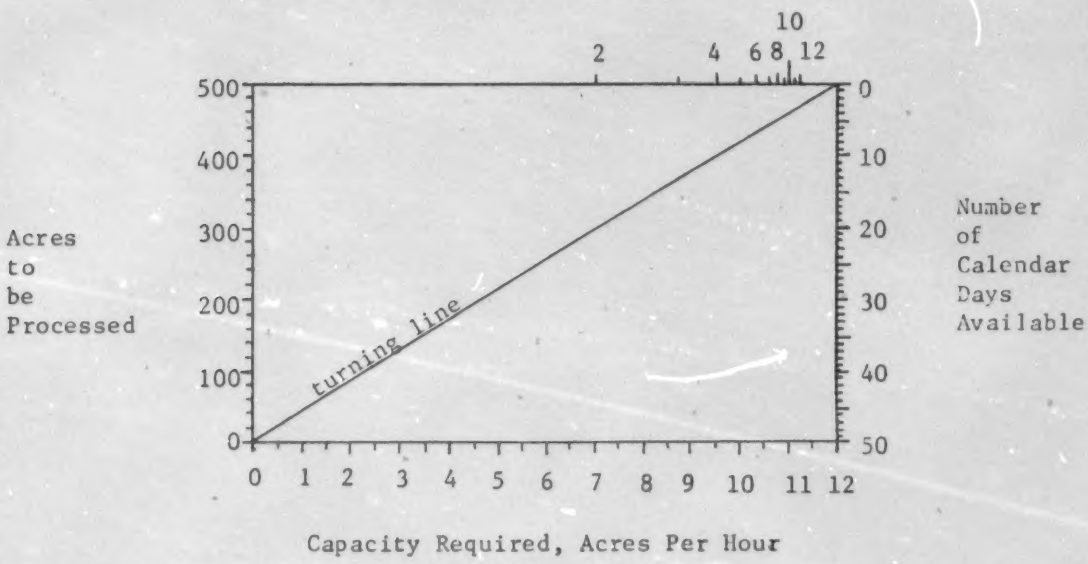
Alignment Chart for Estimating Machine Capacity



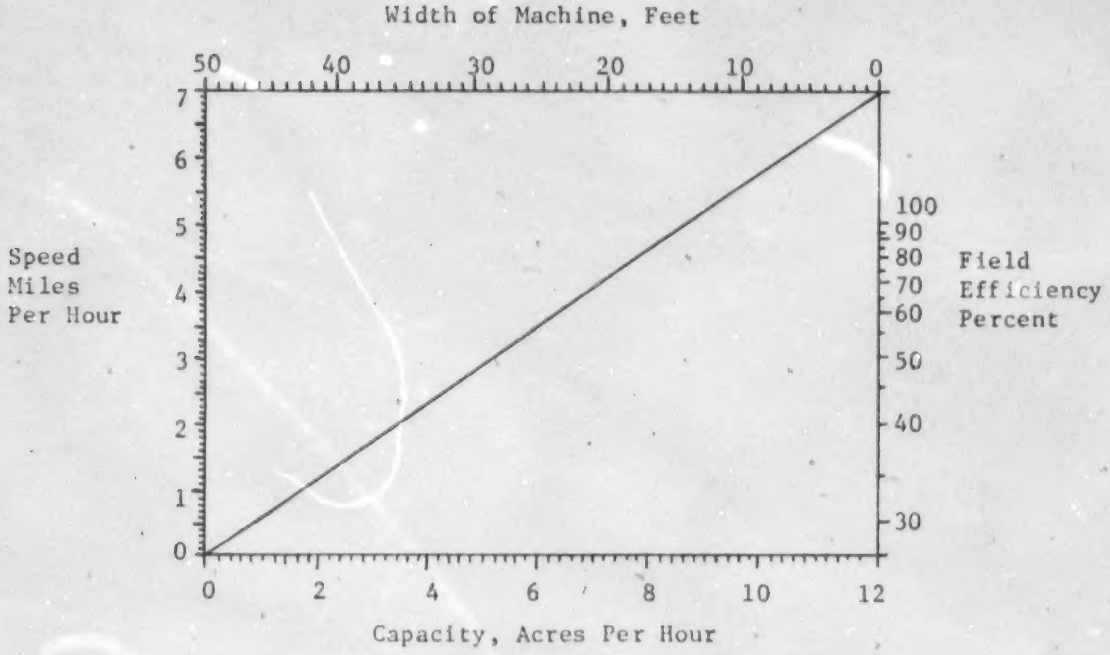
ASSIGNMENT SHEET #1--DETERMINING THE REQUIRED CAPACITY OF A MACHINE

Work each of the problems below. Use the alignment chart enclosed.



ASSIGNMENT SHEET #2--ESTIMATING
THE MACHINE CAPACITY

Using the alignment sheet below, work each of the following problems



ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

1. 2.25 acres per hour
2. 3.45 acres per hour
3. 7 hours

Assignment Sheet #2

1. 12 feet
2. 3.4 acres per hour
3. 5.2 acres per hour
4. To be completed by the student

FARM MANAGEMENT IV

UNIT 9: ESTATE PLANNING

I. TERMINAL OBJECTIVE

At the end of this unit the student should be familiar with the objectives and tools used in developing an estate plan. They will understand the advantages and disadvantages of the tools available.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Define estate planning.

B. List five objectives to consider when determining an estate plan.

C. Identify the two types of property.

D. List and describe the three types of interest in property.

E. List the three types of ownership and their effect in estate planning.

F. Identify the three types of business arrangements and some features of each.

G. List some advantages and disadvantages of a death intestate or without a will.

H. State the procedure that occurs in an intestate settlement.

I. Define what a will is and some advantages of having a will.

J. Name five requirements for making a will.

K. List the steps in making a will.

L. Name the three ways a will may be crooked or altered.

M. Understand the basic guidelines when dealing with gifts.

N. Identify the marital deductions on gifts between spouses.

O. Describe if all gifts are taxed.

P. Name the three necessary elements of a trust.

Q. List three uses of a trust.

R. Describe the three types of trusts.

S. Understand the type of authority vested in a trustee(s).

T. List four important uses of insurance in estate planning.

U. Explain what "Incident of Ownership" in an insurance policy means.

V. List the two types of annuities.

W. Describe how an annuity works.

X. Identify some tax problems with annuities.

Y. Understand the three fundamental approaches using marital deductions.

Z. Define probate.

AA. List three reasons for probate.

BB. List factors involved in probate.

CC. Understand the steps in determining the value of an estate.

DD. Identify deductions taken from adjusted gross estate which gives the taxable estate.

EE. Identify the two steps when determining estate taxes from the taxable estate.

FF. List four credits against the estate tax paid.

GG. Describe the alternatives in determining the time for tax payment.

HH. Understand the special valuation method in determining the carryover basis for income tax purposes.

II. List and explain the five steps in the estate planning process.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide the booklet "Farm Estate Planning" Dept. of Economics, Coop. Exten. Service, Kansas State University.
2. Discuss objectives and information.
3. Have student develop objectives in their estate plan.
4. Have student list components of the gross estate.

B. Student:

1. Develop objectives of own estate.
2. List componenets for own gross estate.

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. What is estate planning?

It is the development, design, and implementation of a comprehensive plan by which the objectives of the planner can be carried out with maximum personal and economic satisfaction.

B. Additional information can be found in "Farm Estate Planning" Dept. of Economics, Cooperative Extension Service, Kansas State University.

V. INSTRUCTIONAL MATERIAL

A. Inventory of Personal Assets

B. Estate Information and Objectives.

C. Estate Planning Schedule.

VI. REFERENCES

A Guide for Executors and Administrators, Kansas Cooperative Extension Service, Kansas State University, Circular-455, June 1971.

"Do It Right the First Time" St. Louis, MO: Doane Agriculture Service

Estate Planning, Kansas Cooperative Extension Service, Kansas State University, Circular-371, June 1974.

Estate Planning In Kansas--Principles and Problems, Kansas Agricultural Experiment Station, Bulletin 566, January, 1974.

"Estate Planning: Key to Safeguarding Your Farms Future." International Harvester Farm Forum, The International Harvester Magazine, Issue No. 1, 1977.

Farm Estate Planning, Dept. of Economics, Cooperative Extension Service, Kansas State University, 1978.

Farm Estate and Business Planning, Skokie, Illinois: Agri-Business Publications, 1974.

Fundamentals of Farm Estate and Business Planning, Kansas Cooperative Extension Service, 1975.

Source Unit in Estate Planning, Curriculum Materials Service, Department of Vocational Education, Colorado State University, Fort Collins, Colorado 80523

What is Probate?, Kansas Cooperative Extension Service, Leaflet 210, June, 1969.

Why a Will?, Kansas Cooperative Extension Service, Circular-377, June, 1974.

"Young Farmers Need Estate Planning Too," Agri-Educator, Vol. 1, No. 1, September, 1976.

What my lawyer should know

When starting your estate plan, you can save time and money if you have the necessary information in hand when you make that first visit to your lawyer. The following list is an abridged list o material you will need. Use additional sheets o paper when making your list.

Name _____ Age ___ Soc. Security No. _____

Name of Spouse _____ Age ___ Soc. Security No. _____

Children (names, ages, addresses, occupation; name of spouses and children if married) _____

_____

Estate Summary

Bank accounts (name and location of bank, amount held by husband, wife and jointly by both, ***exact*** names o accounts)

Checking: savings: cash: _____

Stocks and bonds (description, years purchased, number, exact name of owner, face value, cost) _____

_____

Life insurance (company, policy number, double indemnity?, amount owned by husband, wife, joint, *exact* name insured and beneficiary on policy) _____

Trusts (type, location, trustee, who established, *exact* name of beneficiary, value owned by whom) _____

Notes, mortgages and accounts receivable (description, year acquired, value, person who owes you) _____

Real estate (list type of property and acres, location, year acquired, cost, owned by, market value) _____

Personal property (list livestock, motor vehicles, machinery, crop inventory, home furnishings, jewelry, art, antique personal items; describe, cost and value and who owns) _____

Liens against property (property mortgaged, name of creditor, date due, remaining amount due from husband, wi jointly) _____

Mortgages and other real estate debts (description, name of creditor, date due and amount remaining to be paid husband, wife, jointly, and whether insured) _____

Other personal liabilities (unsecured notes, insurance loans, notes endorsed, real estate taxes, personal prope taxes, state taxes including income and inheritance, federal taxes including income, gifts, etc., unsettled claims, na of creditor, date due, amount remaining to be paid by husband, wife, jointly) _____

Retirement benefits (pensions, profit sharing, deferred compensation, social security, annual benefits for husba and wife, amount invested and death benefits) _____

Other financial information (income last year, current income, salary, retirement income, annuities, rents, inter bonuses, dividends, trusts, capital gains, etc.) _____

Have you used the lifetime gift exemption? (for wife, husband and how much) _____

Who will be guardian for your children that are not of legal age? _____

Where are your special papers kept? (make a list and name exact location—husband and wife's will, deeds, insura policies, stock and bonds, financial statements, income tax returns for last five years, gift tax returns, contra partnership and corporation agreements, profit sharing plan, etc.)

FARM MANAGEMENT IV

UNIT II: MANAGING HIRED LABOR

I. TERMINAL OBJECTIVE

At the end of this unit the student should be familiar with the guidelines and regulations as they pertain to managing hired farm labor.

II. SPECIFIC OBJECTIVES

After instruction, the student should be able to:

A. Explain why it is important to examine the volume of farm business or gross income when determining whether to hire labor.

B. Understand how to determine the amount of gross income needed to justify additional labor expense.

C. List three points to consider when making the decision of whether to hire more labor or purchase more machinery.

D. List five characteristics of personal treatment to maintain employer-employee relations.

E. Name five items which should be specified in a farm labor agreement.

F. Describe what a reasonable level of wages and hours should be based on.

G. List the types of fringe benefits commonly available and advantages of their use.

H. Understand why working conditions are an important part of employer-employee relations.

I. Name four types of incentive plans used by farm employers.

J. Describe six important considerations in developing incentive plans.

K. Name the social security rate to be paid for hired farm labor.

L. Explain when social security deductions have to be made and when de[illegible] are due.

M. List three current child labor requirements and explain each.

N. Name four types of work related illness, injury, and death records required.

III. POSSIBLE LEARNING ACTIVITIES

A. Instructor:

1. Provide publication "Managing Hired Farm Labor" Cooperative Extension Service, Kansas State University.

2. Discuss objectives and information.

B. Student:

1. Read Extension publication "Managing Hired Farm Labor".

IV. OUTLINE OF INSTRUCTIONAL CONTENT

A. Information available in "Managing Hired Farm Labor" Cooperative Extension Service, Kansas State University.

V. INSTRUCTIONAL MATERIALS

VI REFERENCES

"Managing Hired Farm Labor" Cooperative Extension Service, Kansas State University, MF-204.

"Labor Requirements for Eastern Kansas Crops" Cooperative Extension Service, Kansas State University, Bulletin 587.

"Labor Requirements of Central Kansas Crops" Cooperative Extension Service, Kansas State University, Bulletin 589.

"Labor Requirements of Western Kansas Crops" Cooperative Extension Service, Kansas State University, Bulletin 593.